To: Wiese, Carrie[carrie.wiese@nebraska.gov]
From: Avey, Lance
Sent: Thur 9/22/2016 4:11:54 PM
Subject: RE: Results of modeled scoring ranking following SO2 TAD

Hi Carrie,

Yes, it appears you have your understanding correct. The Whitmore site is the blue tab in the lower right of the image, and OPPD North Omaha is about 1 km to the northwest of the Whitmore tab (and yes the coal pile is a good marker for North Omaha and OPPD's property). And yes, the area referenced to the south as a potential good location is directly due south of the North Omaha Station, just beyond the OPPD property boundary in that direction.

The other blue tab to the northwest does represent the old monitor location. I agree that siting a monitor to the northwest could have issues with interference. Really the only good placement to the northwest may be just across from the OPPD property (I think from the map there is a park over there), but at the same time the modeling results really do not support that location. At one time there was a sense to place a monitor to the northwest as that would a location that would potentially see the downwind impacts of both OPPD and WSEC. But if there are siting interference from trees and the modeling analysis puts more emphasis on the area due south of North Omaha, then I would think the area to the south would be more than justified.

Let me know of any more questions,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Thursday, September 22, 2016 10:39 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Results of modeled scoring ranking following SO2 TAD

Lance, thanks very much for your assistance with this. Looking at the map with the top 50, I just want to be sure I understand what I'm seeing – it looks like the Whitmore monitor is marked with the blue tab to the lower right/middle, and then North Omaha Station is NW of there (the coal pile appears to be visible, along the river). The area you're referencing to the south as a good placement option would be just west/northwest of Whitmore, and almost due south of North Omaha station?

As for the area to the northwest, I'm not sure but I think the other blue tab may mark our old monitor location that we determined was experiencing too much interference from trees in the area. Is there a strong sense that we would need a monitor to the NW of North Omaha station? It looks like most, if not all, of those areas would experience similar interference as our old monitor.

Thanks again!
Carrie

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, September 22, 2016 10:00 AM
To: Wiese, Carrie
Subject: Results of modeled scoring ranking following SO2 TAD

Hi Carrie,

Attached are 2 images of the "scoring" ranking using modeled normalized emissions from OPPD and WSEC. The dots give the locations of the top 50 scoring receptors based on the modeling. The lower the score (i.e., the redder the dots) gives the highest ranked receptors. I also attached

the results for the top 100 scoring receptors so you can see the difference as you trim from a top 100 scoring to top 50 scoring. The blue markers on the image give the location of the current Whitmore site and the past site to the northwest that was discontinued in 2010.

You can see the model clusters the best ranked areas just to the south and north of OPPD. Obviously just to the north is the Missouri River, and that area would likely not be able site a monitor. So I would think the areas for a best possible new site are:

1) Just to the south of OPPD, which would be a few blocks to the northwest of the current Whitmore monitor.

2) Somewhere just to northwest of OPPD; somewhere in the top 100 receptors in that area could possible give a good location that is downwind of both OPPD and WSEC.

Lastly I attached the spreadsheet of the results of the top 100 receptors; this is what was provided to Lisa. It gives the location (in UTM coordinates) in Column A and the "Score" in Column F.

Please let me know of questions,

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]
Cc: McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; Krzak, Jennifer [DNR][Jennifer.Krzak@dnr.iowa.gov]; brad.ashton@dnr.iowa.gov[brad.ashton@dnr.iowa.gov]; Zayudis, Peter [DNR][Peter.Zayudis@dnr.iowa.gov]
From: Avey, Lance
Sent: Wed 9/21/2016 4:52:00 PM
Subject: RE: EPA/DNR Cedar Rapids SO2 discussion

Hi Matthew,

A couple people out of the office here today so not sure of their schedules, but let's lock in Thurs 10/6 at 10am. That should work, and will let you know in advance if we would need to re-shedule.

Thanks for setting this up,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Johnson, Matthew [DNR] [mailto:Matthew.Johnson@dnr.iowa.gov]
Sent: Wednesday, September 21, 2016 11:19 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; brad.ashton@dnr.iowa.gov; Zayudis, Peter [DNR] <Peter.Zayudis@dnr.iowa.gov>
Subject: EPA/DNR Cedar Rapids SO2 discussion

Hello Lance,

To get scheduling started here are some times that currently work for us for a call to discuss our recent Data Requirements Rule activities (modeling/permitting) for Cedar Rapids.

Wed 9/28 - 2 pm

Thu 10/6 - 10 am

Mon 10/10 – 10 am, 1 pm or 2 pm

Thank you for the coordination on your end,

Matthew

From: Ashton, Brad [DNR]
Sent: Wednesday, September 21, 2016 11:05 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>
Subject: RE: DRR modeling questions

Lance,

Matthew will be coordinating a call so we can discuss your questions.

- Brad

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Wednesday, September 21, 2016 9:09 AM
To: Ashton, Brad [DNR] <Brad.Ashton@dnr.iowa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>
Subject: RE: DRR modeling questions

Thank you, Brad. Just quickly, for ADM/Prairie Creek, are the actuals emissions being used from the 2012-14 timeframe? I could see some push-back that the 3 most recent available years (2013-15) are not being used. Maybe just a note that the 2015 operations fall in line with what is seen in the 2012-14 timeframe would suffice.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Tuesday, September 20, 2016 8:36 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>
Subject: RE: DRR modeling questions

Lance,

Please see my responses in bolded red text below.

- Brad

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, September 13, 2016 10:08 AM
To: Ashton, Brad [DNR] <Brad.Ashton@dnr.iowa.gov>
Subject: DRR modeling questions

Hi Brad,

I have a couple questions on the upcoming DRR modeling for some Iowa sources:

1) For IPL Prairie Creek, have the modeled emissions rate for Boiler #1,2,3,4 been determined? The protocol I have says TBD. Are they planning to use existing limits, new limits, or actuals?

For boilers 1-3 we are using annual average actual emissions. For boiler 4 we are using a new emission limit based on natural gas that will require compliance in late 2017.

2) For ADM Cedar Rapids, are the five boilers being modeled with actual emissions? The protocol mentions a mix of potential and actuals for ADM sources.

The boilers were modeled using emission rates that are approximately 5-10% higher than the maximum annual average actuals for the period 2012-2014.

3) For Walter Scott, is the nearby OPPD emissions still planning to be modeled using the maximum 1-hr emissions over the most recent 3-yr period? Are OPPD Units 1-3 (which have shutdown) still planned to be modeled as the original protocol states?

We are still deciding how to proceed.

4) For George Neal, since it was designated unclassifiable for the last round, does IDNR plan to submit updated modeling? Since George Neal is still under consideration for the DRR, the most recent years of meteorology and emissions information (2013-2015 instead of 2012-2014) may need to be considered.

We may re-recommend attainment/unclassifiable now that the permits for George Neal North Units 1 & 2 have been rescinded, but there is no need to update the modeling since we used maximum allowable emission rates and 2012-2014 meteorology.

5) The background value to be used is the updated statewide value of 7ug/m3? Some DRR protocols mention the previous 32 ug/m3.

We will be using a background of 7 ug/m^3 because all nearby sources of SO2 are already included in each model. This background concentration is representative of natural background in the absence of local sources of SO2.

Thanks for any information, and please let me know of questions.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]
Cc: McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]; Krzak, Jennifer [DNR][Jennifer.Krzak@dnr.iowa.gov]
From: Avey, Lance
Sent: Wed 9/21/2016 2:09:26 PM
Subject: RE: DRR modeling questions

Thank you, Brad. Just quickly, for ADM/Prairie Creek, are the actuals emissions being used from the 2012-14 timeframe? I could see some push-back that the 3 most recent available years (2013-15) are not being used. Maybe just a note that the 2015 operations fall in line with what is seen in the 2012-14 timeframe would suffice.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Tuesday, September 20, 2016 8:36 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>
Subject: RE: DRR modeling questions

Lance,

Please see my responses in bolded red text below.

- Brad

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, September 13, 2016 10:08 AM
To: Ashton, Brad [DNR] <Brad.Ashton@dnr.iowa.gov>
Subject: DRR modeling questions

Hi Brad,

I have a couple questions on the upcoming DRR modeling for some Iowa sources:

1) For IPL Prairie Creek, have the modeled emissions rate for Boiler #1,2,3,4 been determined? The protocol I have says TBD. Are they planning to use existing limits, new limits, or actuals?

For boilers 1-3 we are using annual average actual emissions. For boiler 4 we are using a new emission limit based on natural gas that will require compliance in late 2017.

2) For ADM Cedar Rapids, are the five boilers being modeled with actual emissions? The protocol mentions a mix of potential and actuals for ADM sources.

The boilers were modeled using emission rates that are approximately 5-10% higher than the maximum annual average actuals for the period 2012-2014.

3) For Walter Scott, is the nearby OPPD emissions still planning to be modeled using the maximum 1-hr emissions over the most recent 3-yr period? Are OPPD Units 1-3 (which have shutdown) still planned to be modeled as the original protocol states?

We are still deciding how to proceed.

4) For George Neal, since it was designated unclassifiable for the last round, does IDNR plan to submit updated modeling? Since George Neal is still under consideration for the DRR, the most recent years of meteorology and emissions information (2013-2015 instead of 2012-2014) may need to be considered.

We may re-recommend attainment/unclassifiable now that the permits for George Neal North Units 1 & 2 have been rescinded, but there is no need to update the modeling since we used maximum allowable emission rates and 2012-2014 meteorology.

5) The background value to be used is the updated statewide value of 7ug/m3? Some DRR protocols mention the previous 32 ug/m3.

We will be using a background of 7 ug/m^3 because all nearby sources of SO2 are already included in each model. This background concentration is representative of natural background in the absence of local sources of SO2.

Thanks for any information, and please let me know of questions.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Thur 9/8/2016 9:06:40 PM
Subject: RE: Justification Document for DRR
Seperate Area Justification.docx

Did the attached document detailing Brad's analysis go through this time?

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Thursday, September 08, 2016 4:01 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Justification Document for DRR

Lance:

For some reason my email client removed the images - very odd

Could you resend as a zip file, with *.abc as the extension?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, September 08, 2016 3:49 PM
To: Alam, Lisa
Subject: FW: Justification Document for DRR

Forwarding Brad's analysis.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Wednesday, September 07, 2016 11:04 AM
To: Avey, Lance <Avey.Lance@epa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>; Wiese, Carrie <carrie.wiese@nebraska.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>
Subject: Justification Document for DRR

All,

I am providing the attached document in advance of tomorrow's call to discuss the

Omaha/Council Bluffs SO2 DRR work. The document includes the Iowa DNR's justification for considering the two areas separately under the DRR, and is based on the additional technical analyses we discussed during our previous call.

Carrie,

Please distribute this information to anyone else at NDEQ that will be joining us on the call tomorrow.

- Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling

Iowa Department of Natural Resources

P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

To: lisa.alam@nebraska.gov[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Thur 9/8/2016 8:48:37 PM
Subject: FW: Justification Document for DRR
removed.txt
Seperate Area Justification.docx

Forwarding Brad's analysis.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Wednesday, September 07, 2016 11:04 AM
To: Avey, Lance <Avey.Lance@epa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>; Wiese, Carrie <carrie.wiese@nebraska.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>
Subject: Justification Document for DRR

All,

I am providing the attached document in advance of tomorrow's call to discuss the Omaha/Council Bluffs SO2 DRR work. The document includes the Iowa DNR's justification for considering the two areas separately under the DRR, and is based on the additional technical analyses we discussed during our previous call.

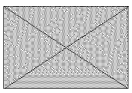
Carrie,

Please distribute this information to anyone else at NDEQ that will be joining us on the call tomorrow.

- Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling

Iowa Department of Natural Resources



P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

********** ATTACHMENT REMOVED **********

This message contained an attachment which the administrator has caused to be removed.

********** ATTACHMENT REMOVED **********

Attachment name: [image001.jpg]
Attachment type: [image/jpeg]

Separate Area Justification for Omaha, NE and Council Bluffs, IA

Executive Summary

There is no definition of an "area" in the Data Requirements Rule (DRR), only that multiple sources within one area must all use the same method to evaluate SO_2 concentrations (*i.e.* either monitoring, modeling or suitable emission limits). For this reason, the Iowa Department of Natural Resources (Iowa DNR) has analyzed the predicted impacts from MidAmerican's Walter Scott Jr. Energy Center (WSEC) and the Omaha Public Power District's North Omaha Station (OPPD) in the vicinity of the other to determine if it is necessary to evaluate them in the same way for purposes of the DRR. This analysis indicates that, while OPPD has the potential to cause a significant concentration gradient in the vicinity of WSEC, the reverse is not true. The Iowa DNR concludes that emissions from OPPD should be included in the modeling conducted for WSEC, but that impacts from WSEC should be adequately represented by monitored background concentrations in the vicinity of OPPD.

Background

MidAmerican's Walter Scott Jr. Energy Center (WSEC), located in Council Bluffs, IA, and the Omaha Public Power District's North Omaha Station (OPPD) have been identified as two sources that meet the criteria for being evaluated as part of the DRR. These two sources are located approximately 19 kilometers apart. The Nebraska Department of Environmental Quality (NDEQ) and the Iowa DNR have proposed to use different methods to evaluate the 1-hour SO_2 impacts from the sources in their respective states. NDEQ has proposed to use monitoring while Iowa DNR has proposed to use modeling. Under the DRR, this is only permissible if the sources are located in two different "areas." This document serves as the justification that the two areas should be treated separately.

Consideration of EPA Guidance

The following excerpt from the SO_2 Modeling TAD (August 2016, page 7) provides an overview of when the emissions from separate sources could interact: "Appendix W states in Section 8.2.3.b that all sources expected to cause a significant concentration gradient in the vicinity of the source of interest should be explicitly modeled and that the number of such sources is expected to be small except in unusual cases. Other sources in the area, i.e. those not causing significant concentration gradients in the vicinity of the source of interest, should be included in the modeling via monitored background concentrations." This language can serve loosely as a definition of the term "area" as it applies to the DRR. The source interaction is governed by the concept of a significant concentration gradient, which is applicable beyond the scope of a modeling analysis.

The SO_2 Modeling TAD (page 8) further explains the concept of significant concentration gradients by referencing the March 1, 2011 NO_2 memorandum, which "offers guidance on the determination of significant concentration gradients and distance from the source." The memo discusses that concentration gradients associated with a particular source will be generally largest between the source and the maximum ground level concentrations from the source. Beyond that distance gradients tend to be smaller and more spatially uniform. The memo also offers a general guideline

that the distance between a source and its maximum ground level concentration is generally 10 times the stack height in flat terrain. However, the potential influence of terrain can impact the location and magnitudes of significant concentration gradients. The use of significant concentration gradients can help inform the decision on the size of the modeling domain and sources to consider for modeling.

The stacks at WSEC and OPPD are on the order of 550 feet and 200 feet tall respectively. Using the 10x criterion listed in the SO_2 Modeling TAD, the distance to maximum impact from WSEC and OPPD would be 5,500 feet and 2,000 feet in the absence of elevated terrain (see red circles in Figure 1). Based on this information, the area of maximum concentrations from the two sources would not be expected to overlap, and it would be unlikely that either source would cause a significant concentration gradient in the vicinity of the other source in areas of flat terrain. That being said, both facilities are located in the Missouri River valley. There are significant bluffs (on the order of 200 feet tall) to the east and west. A transect of the river valley is depicted by the yellow line in Figure 1, with the elevation profile of the transect shown along the bottom of the figure. The corresponding facility locations and the relative height of the stacks at each facility compared to the height of the bluffs are also shown in the elevation profile for reference (the elevation profile, and the stacks depicted therein, are to scale). Given the potential impact that the emissions from the facilities could have on the elevated terrain, a more detailed modeling analysis was conducted.

Modeling Evaluation

The 2012-2014 hourly actual emissions from WSEC (Units 3 and 4 only) and from OPPD (Units 4 and 5 only) were obtained from the facilities. These emissions data were modeled from each facility on receptor grids surrounding the other facility to depict the impacts that each would have in the vicinity of the other, including the bluffs alongside the river valley.

OPPD Modeling Analysis: The modeling analysis of OPPD's emissions indicate an area of increased concentration in the NW corner of the grid around WSEC that decreases in magnitude as the plume travels southeast, with areas of increased concentration in the vicinity of the bluffs to the east and southeast of WSEC (see Figure 2). These areas of increased concentration along the bluffs to the southeast of WSEC indicate that OPPD could cause a significant concentration gradient in the vicinity of WSEC. "Significant concentration gradients in the vicinity of the source imply that the nearby source's potential interaction with the proposed source's impacts will not be represented well by monitored concentrations at a specific location" (Presentation: "Challenges in Modeling for New 1-hour NO_2 and SO_2 NAAQS," Tyler Fox - EPA, March14, 2012, slide 15). Based on this, it would be necessary to include OPPD in the DRR evaluation for WSEC, which the Iowa DNR has proposed to do in the existing modeling protocol for WSEC.

WSEC Modeling Analysis: The modeling analysis of WSEC's emissions indicate an area of increased concentration in the southeast corner of the grid around OPPD that decreases in magnitude as the plume disperses to the northwest, with a uniform distribution of concentrations around OPPD (see Figure 3). The lack of substantially high concentrations in the grid around OPPD, along with the lack of increased concentration in the areas of elevated terrain northwest of OPPD, indicate that WSEC would not cause a significant concentration gradient in the vicinity of OPPD.

Conclusions

This analysis shows that these two sources do not cause significant concentration gradients in the vicinity of each other in areas of flat terrain, and that while emissions from OPPD will cause significant concentration gradients in areas of elevated terrain in the vicinity of WSEC, the reverse is not true. The one-way interaction of the emissions from these two facilities supports the use of different methods of evaluation of these two sources under the DRR.

Figure 1. Location, Meteorology, and Elevation Profile of WSEC and OPPD Sites

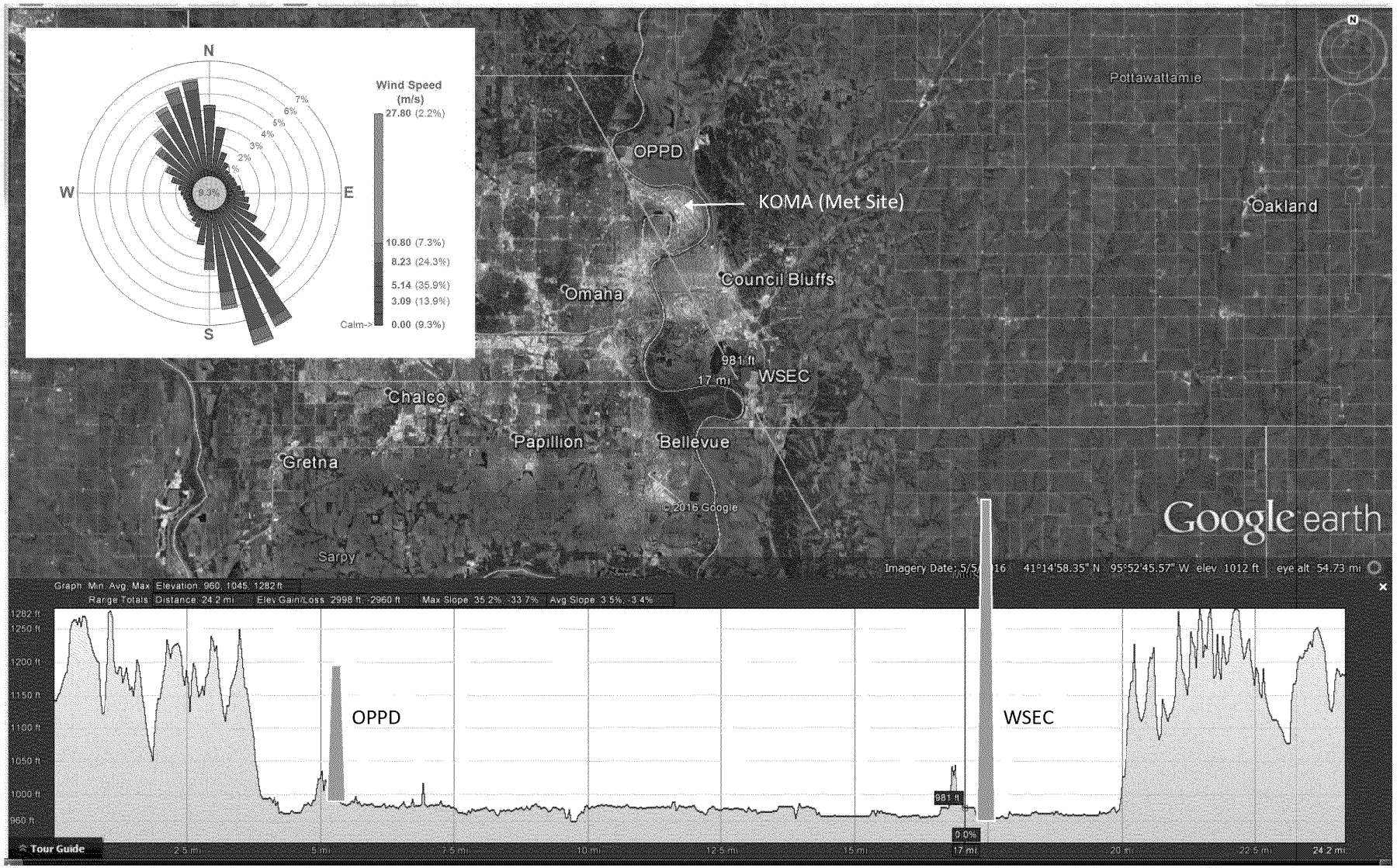


Figure 2. OPPD predicted concentrations (µg/m^3) on the area around WSEC.

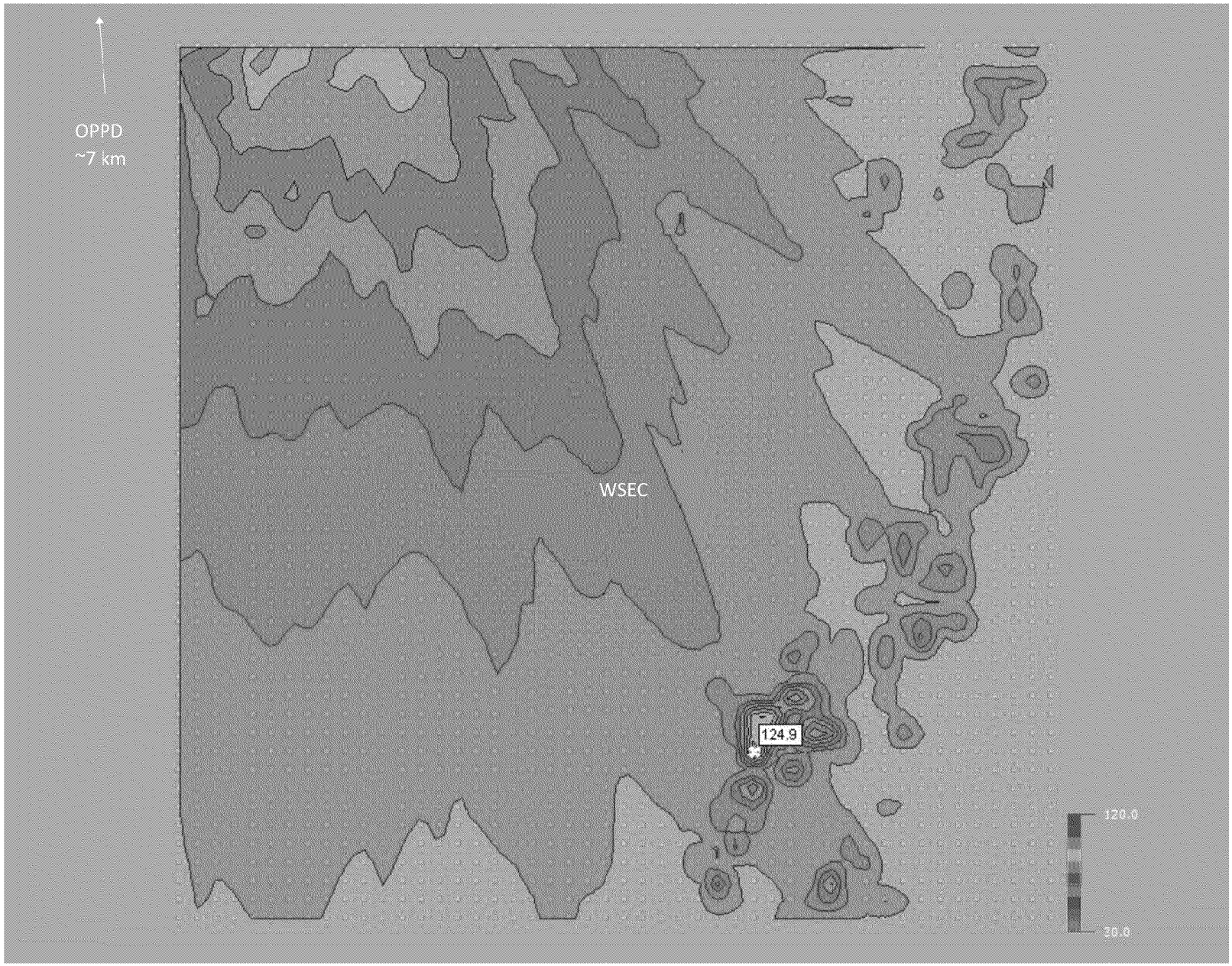


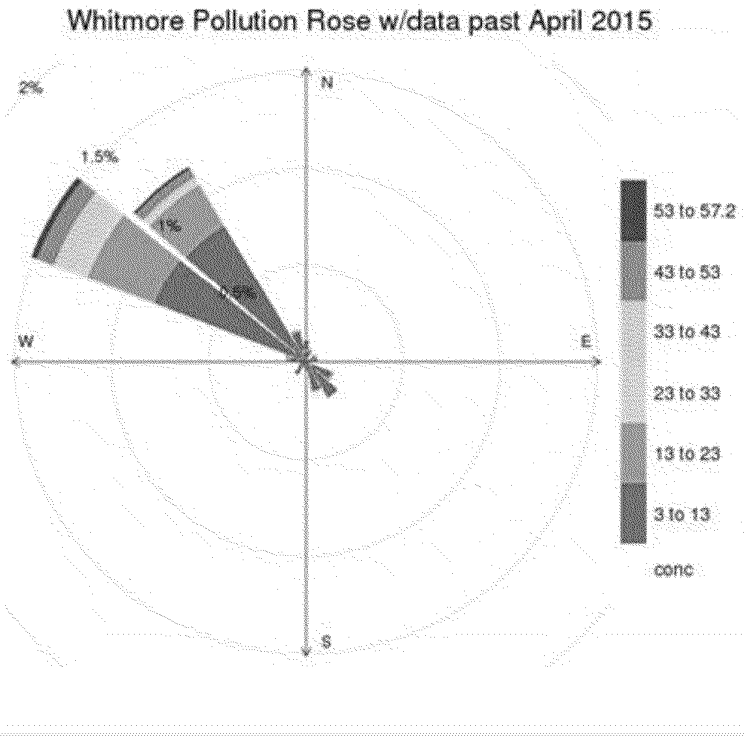
Figure 3. WSEC predicted concentrations (µg/m^3) on the area around OPPD.

OPPD
71.8
30.0
120.0
WSEC
~7 km

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]
Cc: McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]
From: Avey, Lance
Sent: Thur 9/8/2016 3:45:41 PM
Subject: RE: Justification Document for DRR

Hi Brad,

Thanks for providing the analysis and justification. And thanks for the information on the available WSEC characteristics that NDEQ can use in their modeling. It got interrupted on the call, but I did look at the SO2 concentrations at Whitmore from April 2015 – December 2015, or after the shutdown of the 2 WSEC units. Below is a pollution rose of the data (in ppb):



You can see there are still some impacts at Whitmore past March 2015 from the direction of WSEC. Overall, there were between 30 to 40 hours during that 9 month period that saw concentrations > 3 ppb from the WSEC at the Whitmore monitor. The max hourly concentration from the WSEC direction was 38.8 ppb (on August 25, 2015). Just some FYI.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Wednesday, September 07, 2016 11:04 AM
To: Avey, Lance <Avey.Lance@epa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>; Wiese, Carrie <carrie.wiese@nebraska.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>
Subject: Justification Document for DRR

All,

I am providing the attached document in advance of tomorrow's call to discuss the Omaha/Council Bluffs SO2 DRR work. The document includes the Iowa DNR's justification for considering the two areas separately under the DRR, and is based on the additional technical analyses we discussed during our previous call.

Carrie,

Please distribute this information to anyone else at NDEQ that will be joining us on the call tomorrow.

- Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling

Iowa Department of Natural Resources

P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

To: Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]; 'Wiese, Carrie'[carrie.wiese@nebraska.gov]; Hamilton, Heather[Hamilton.Heather@epa.gov]
Cc: Hawkins, Andy[hawkins.andy@epa.gov]; Peter, David[peter.david@epa.gov]; McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; brad.ashton@dnr.iowa.gov[brad.ashton@dnr.iowa.gov]; Krzak, Jennifer [DNR][Jennifer.Krzak@dnr.iowa.gov]; Wharton, Tracy[tracy.wharton@nebraska.gov]; Algoe-Eakin, Amy[Algoe-Eakin.Amy@epa.gov]
From: Avey, Lance
Sent: Wed 8/31/2016 8:19:16 PM
Subject: RE: call to discuss Omaha/Council bluffs SO2 DRR work

Yes, that will work.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Johnson, Matthew [DNR] [mailto:Matthew.Johnson@dnr.iowa.gov]
Sent: Wednesday, August 31, 2016 3:15 PM
To: 'Wiese, Carrie' <carrie.wiese@nebraska.gov>; Avey, Lance <Avey.Lance@epa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>
Cc: Hawkins, Andy <hawkins.andy@epa.gov>; Peter, David <peter.david@epa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; brad.ashton@dnr.iowa.gov; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Wharton, Tracy <tracy.wharton@nebraska.gov>; Algoe-Eakin, Amy <Algoe-Eakin.Amy@epa.gov>
Subject: RE: call to discuss Omaha/Council bluffs SO2 DRR work

Does Thursday Sep 8, at 9 am work for everyone?

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Wednesday, August 31, 2016 3:14 PM
To: Avey, Lance <Avey.Lance@epa.gov>; Johnson, Matthew [DNR]

<Matthew.Johnson@dnr.iowa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>
Cc: Hawkins, Andy <hawkins.andy@epa.gov>; Peter, David <peter.david@epa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Ashton, Brad [DNR] <Brad.Ashton@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Wharton, Tracy <tracy.wharton@nebraska.gov>; Algoe-Eakin, Amy <Algoe-Eakin.Amy@epa.gov>
Subject: RE: call to discuss Omaha/Council bluffs SO2 DRR work

It looks like Thursday could also work for us before 11:00 a.m.

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Wednesday, August 31, 2016 3:10 PM
To: Johnson, Matthew [DNR]; Hamilton, Heather
Cc: Hawkins, Andy; Peter, David; McGraw, Jim [DNR]; brad.ashton@dnr.iowa.gov; Krzak, Jennifer [DNR]; Wiese, Carrie; Wharton, Tracy; Algoe-Eakin, Amy
Subject: RE: call to discuss Omaha/Council bluffs SO2 DRR work

Hi Matthew,

The one day next week that does not work for me (or Andy) would be Sept. 7. Would Tuesday (6^{th}) or Thursday (8^{th}) work?

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Johnson, Matthew [DNR] [mailto:Matthew.Johnson@dnr.iowa.gov]
Sent: Wednesday, August 31, 2016 2:40 PM
To: Hamilton, Heather <Hamilton.Heather@epa.gov>
Cc: Avey, Lance <Avey.Lance@epa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>; Peter, David <peter.david@epa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; brad.ashton@dnr.iowa.gov; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Carrie Wiese (carrie.wiese@nebraska.gov) <carrie.wiese@nebraska.gov>; Tracy Wharton (tracy.wharton@nebraska.gov) <tracy.wharton@nebraska.gov>
Subject: call to discuss Omaha/Council bluffs SO2 DRR work

Hello Heather (and all),

We've spoken with Nebraska and provided an update regarding the1-hour SO2 modeling analyses we've conducted for Walter Scott and OPPD for the data requirement rule. We'd like to have a NE/IA/EPA R7 call to discuss the results. Assuming our planning call next week won't take the full 1.5 hours, would EPA R7 be available for this call at 10 am Wed September 7?

Thanks,

Matthew

To: Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]; Hamilton, Heather[Hamilton.Heather@epa.gov]
Cc: Hawkins, Andy[hawkins.andy@epa.gov]; Peter, David[peter.david@epa.gov]; McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; brad.ashton@dnr.iowa.gov[brad.ashton@dnr.iowa.gov]; Krzak, Jennifer [DNR][Jennifer.Krzak@dnr.iowa.gov]; Carrie Wiese (carrie.wiese@nebraska.gov)[carrie.wiese@nebraska.gov]; Tracy Wharton (tracy.wharton@nebraska.gov)[tracy.wharton@nebraska.gov]; Algoe-Eakin, Amy[Algoe-Eakin.Amy@epa.gov]
From: Avey, Lance
Sent: Wed 8/31/2016 8:10:23 PM
Subject: RE: call to discuss Omaha/Council bluffs SO2 DRR work

Hi Matthew,

The one day next week that does not work for me (or Andy) would be Sept. 7. Would Tuesday (6^{th}) or Thursday (8^{th}) work?

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Johnson, Matthew [DNR] [mailto:Matthew.Johnson@dnr.iowa.gov]
Sent: Wednesday, August 31, 2016 2:40 PM
To: Hamilton, Heather <Hamilton.Heather@epa.gov>
Cc: Avey, Lance <Avey.Lance@epa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>; Peter, David <peter.david@epa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; brad.ashton@dnr.iowa.gov; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Carrie

Wiese (carrie.wiese@nebraska.gov) <carrie.wiese@nebraska.gov>; Tracy Wharton (tracy.wharton@nebraska.gov) <tracy.wharton@nebraska.gov>
Subject: call to discuss Omaha/Council bluffs SO2 DRR work

Hello Heather (and all),

We've spoken with Nebraska and provided an update regarding the1-hour SO2 modeling analyses we've conducted for Walter Scott and OPPD for the data requirement rule. We'd like to have a NE/IA/EPA R7 call to discuss the results. Assuming our planning call next week won't take the full 1.5 hours, would EPA R7 be available for this call at 10 am Wed September 7?

Thanks,

Matthew

To: Wiese, Carrie[carrie.wiese@nebraska.gov]; Peter, David[peter.david@epa.gov]
Cc: Wharton, Tracy[tracy.wharton@nebraska.gov]
From: Avey, Lance
Sent: Fri 8/26/2016 1:48:32 PM
Subject: RE: Sheldon Station Monitor Siting Report

Hi Carrie,

I am really not sure the best way to submit the revised attachment for Sheldon other than through mail or attached in email. Modeling files can be sent to me via a burned CD. I included David Peter on this email, he may have thoughts on best way to submit the updated documentation.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Thursday, August 25, 2016 3:53 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Wharton, Tracy <tracy.wharton@nebraska.gov>
Subject: RE: Sheldon Station Monitor Siting Report

Hi Lance,

I think we're ready to submit the revised attachment for Sheldon as well as the modeling files. How should this be submitted? We will also need the administrative record for the network plan to reflect the updated attachment.

Thanks,

Carrie

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, August 15, 2016 11:12 AM
To: Wiese, Carrie
Cc: Wharton, Tracy
Subject: RE: Sheldon Station Monitor Siting Report

Hi Carrie,

Thanks for passing this along. From the technical perspective, this looks good and satisfies the criteria in the Monitoring TAD. Would you be able to pass on the modeling files when NDEQ receives them?

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Friday, August 12, 2016 2:24 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Wharton, Tracy <tracy.wharton@nebraska.gov>
Subject: FW: Sheldon Station Monitor Siting Report

Hi Lance,

Attached, please find a draft report from NPPD concerning the monitor siting for Sheldon Station. Does this satisfy the further needs we discussed on the site justification?

Thanks,

Carrie

From: Vanek, Jason A. [mailto:javanek@nppd.com]
Sent: Friday, July 29, 2016 11:00 AM
To: Wiese, Carrie; Wharton, Tracy; Schneider, Shelley
Cc: Holmes,, Scott- Lincoln Lancaster County Health Department; Schroeder,, Chris- City of Lincoln; Citta Jr., Joseph L.
Subject: Sheldon Station Monitor Siting Report

Attached is the Sheldon Station SO2 monitor siting report showing the preferred location of the SO2 monitor. I attempted to email the modeling files but due to the size of the attachment the email was rejected by your systems. I will mail a hard copy of the report along with a CD of the modeling files to the NDEQ. If you have any questions please let me know.

Thank you

Jason Vanek, P.E.

Environmental Engineer

Nebraska Public Power District

E-Mail: javanek@nppd.com

Office: (402) 563-5333

Cell: (402) 910-1717

Fax: (402) 563-5168

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Fri 8/19/2016 5:05:25 PM
Subject: RE: adj u* scoring

Hi Lisa,

In terms of the next modeling steps, we will wait and see the analysis done by IDNR.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Friday, August 19, 2016 11:43 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: adj u* scoring

Lance:

Thank you for the update.

I don't have a minute to spare today, but I will look this over next week.

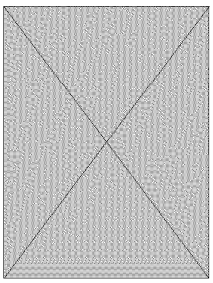
I'm unclear about what the next modeling steps are, if any.

I would rather see Walter Scott pursue a monitoring plan than to see OPPD do a 1-hour SO2 model.

I guess that depends on how areas of significant concentration gradient are to be defined across State borders.

OFFTOPIC

Have you heard? Air Division is getting a new Administrator, Kevin Stoner.



Not a flattering photograph. My own internal online image is horrendous. I look much, much, *much* younger

in person, and a whole lot cuter too.

Air Division is looking forward to working with Kevin. Shelley is going to be the new Water Division

Administrator. I hope Water Division is just as thrilled about this change in leadership.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Friday, August 19, 2016 9:01 AM
To: Alam, Lisa
Subject: adj u* scoring

Hi Lisa,

I ran the scoring analysis for OPPD using the adj_u* Aermet run you provided me a couple weeks ago. I attached the mapped results plotting the top 50 "scores" for both the default Aermod run and the adj_u* run. You can see the adj_u* run removes the top scores at the "distant" higher terrain. The blue markers are the Whitmore monitor and the old SO2 North Post Road monitor. I am going to look at the Aermet SFC file to see how justified adj_u* is, but I would not be against using the adj_u* run as a weight of evidence approach to eliminate the far downwind receptors by the North Omaha airport and focus the rankings on just the areas to the southeast (Whitmore area) or northwest just beyond the fenceline.

I also included the csv file for the adj_u* ranking if you want to plot it in your kml map and compare to the default run.

Let me know of questions,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: lisa.alam@nebraska.gov[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Fri 8/19/2016 2:00:50 PM
Subject: adj u* scoring
scoring_adj_u.csv
top_50_scoring_locations_Aermod_adj_u.png
top_50_scoring_locations_Aermod_defaults.png

Hi Lisa,

I ran the scoring analysis for OPPD using the adj_u* Aermet run you provided me a couple weeks ago. I attached the mapped results plotting the top 50 "scores" for both the default Aermod run and the adj_u* run. You can see the adj_u* run removes the top scores at the "distant" higher terrain. The blue markers are the Whitmore monitor and the old SO2 North Post Road monitor. I am going to look at the Aermet SFC file to see how justified adj_u* is, but I would not be against using the adj_u* run as a weight of evidence approach to eliminate the far downwind receptors by the North Omaha airport and focus the rankings on just the areas to the southeast (Whitmore area) or northwest just beyond the fenceline.

I also included the csv file for the adj_u* ranking if you want to plot it in your kml map and compare to the default run.

Let me know of questions,

Lance

Lance Avey

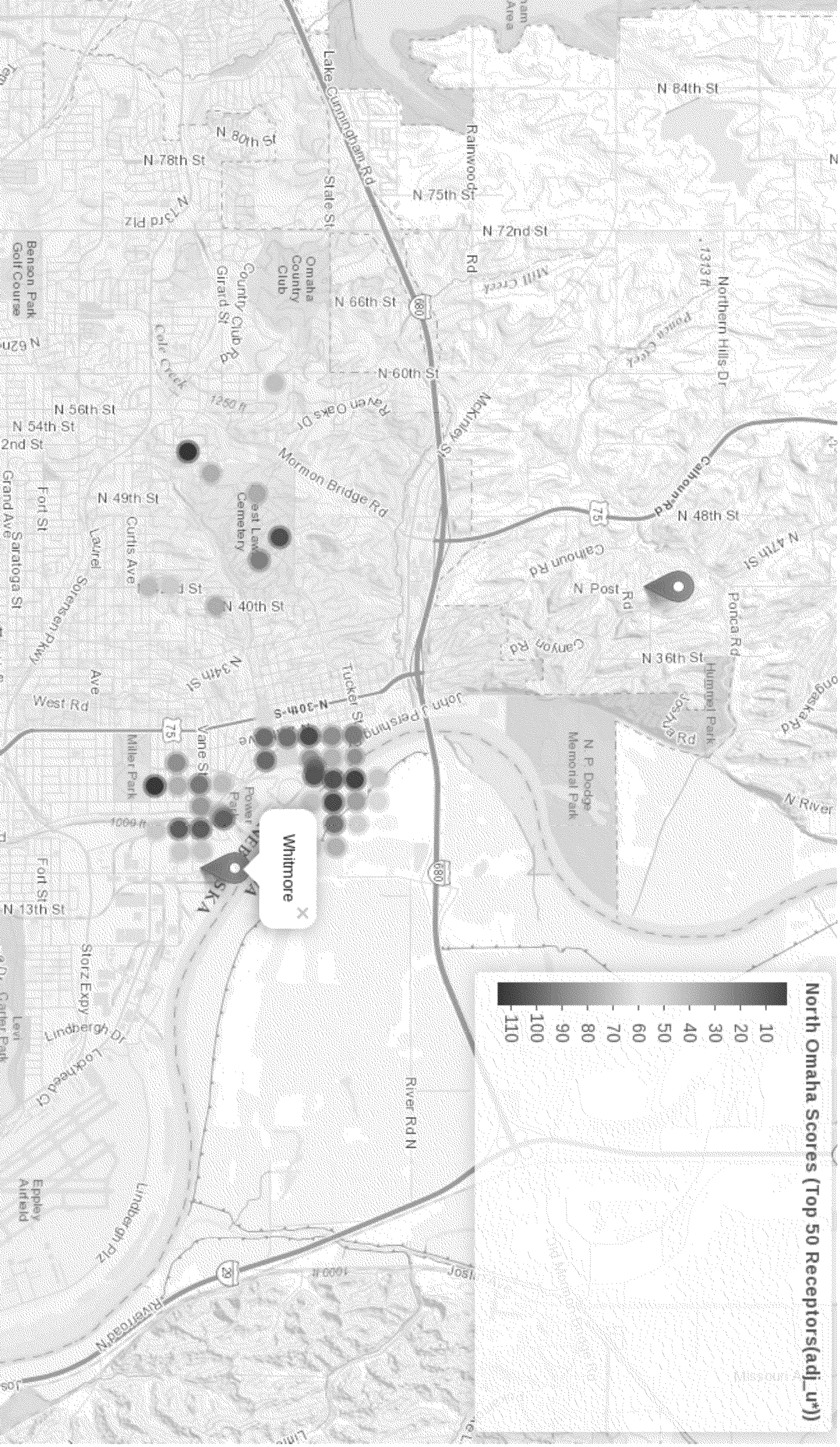
EPA Region 7

11201 Renner Boulevard

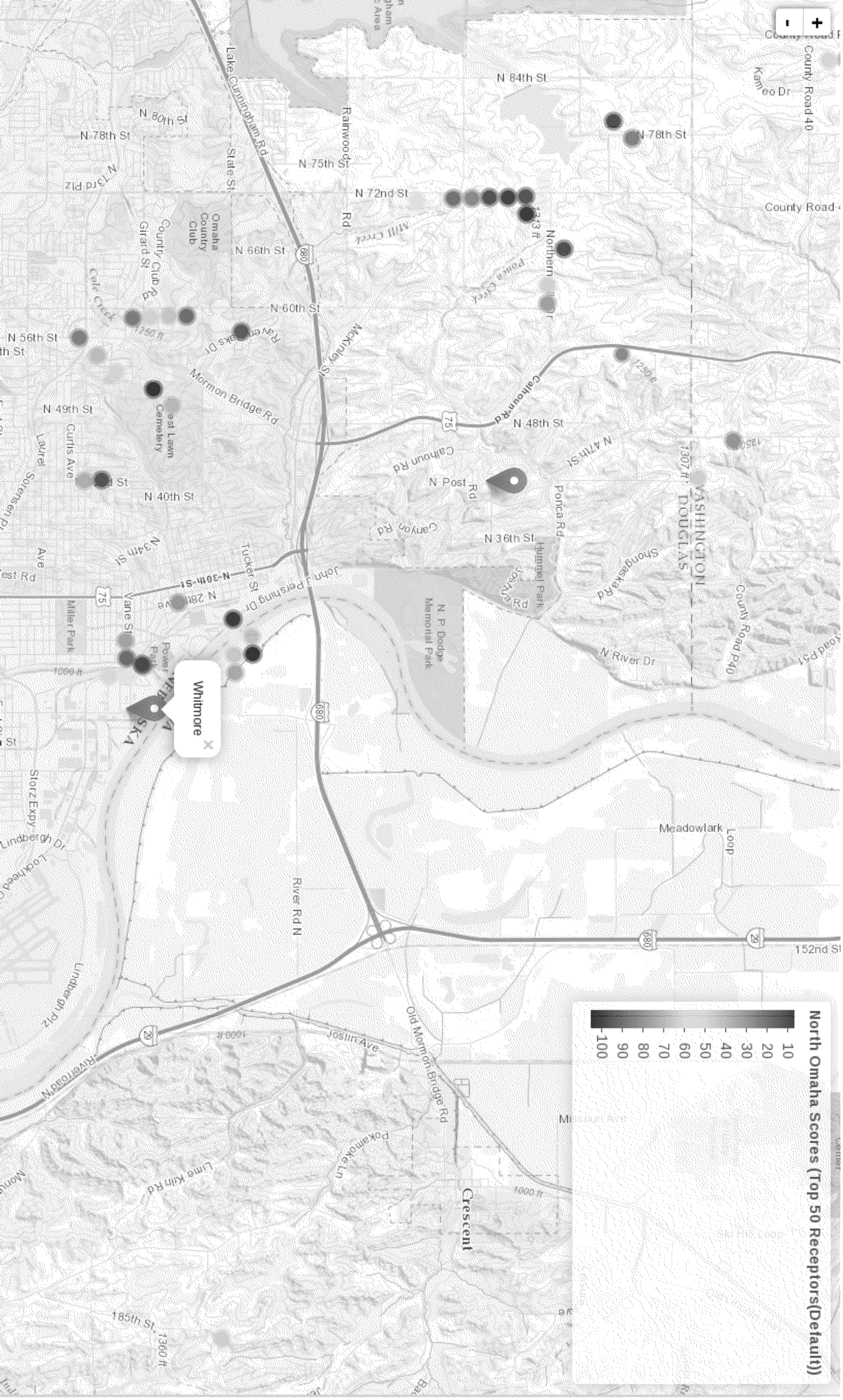
Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov



ED_001261_00011644


North Omaha Scores (Top 50 Receptors(Default))
10
20
30
40
50
60
70
80
90
100
Whitmore

To: Wiese, Carrie[carrie.wiese@nebraska.gov]
Cc: Wharton, Tracy[tracy.wharton@nebraska.gov]
From: Avey, Lance
Sent: Tue 8/16/2016 5:05:59 PM
Subject: RE: Sheldon Station Monitor Siting Report

Hi Carrie,

I think that since the new additional analysis did not change the proposed location of the Sheldon monitoring site, just revising and submitting the appendices and providing the modeling files would be fine.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Tuesday, August 16, 2016 8:50 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Wharton, Tracy <tracy.wharton@nebraska.gov>
Subject: RE: Sheldon Station Monitor Siting Report

Hi Lance,

Yes, we have the modeling files and should be able to get copies made and sent via snail mail. I also don't recall if we talked about the logistics of submitting everything; do we need to submit the full network plan again with these updates, or just submit the revised appendices and modeling files?

Thanks

Carrie

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, August 15, 2016 11:12 AM
To: Wiese, Carrie
Cc: Wharton, Tracy
Subject: RE: Sheldon Station Monitor Siting Report

Hi Carrie,

Thanks for passing this along. From the technical perspective, this looks good and satisfies the criteria in the Monitoring TAD. Would you be able to pass on the modeling files when NDEQ receives them?

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Friday, August 12, 2016 2:24 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Wharton, Tracy <tracy.wharton@nebraska.gov>
Subject: FW: Sheldon Station Monitor Siting Report

Hi Lance,

Attached, please find a draft report from NPPD concerning the monitor siting for Sheldon Station. Does this satisfy the further needs we discussed on the site justification?

Thanks,

Carrie

From: Vanek, Jason A. [mailto:javanek@nppd.com]
Sent: Friday, July 29, 2016 11:00 AM
To: Wiese, Carrie; Wharton, Tracy; Schneider, Shelley
Cc: Holmes,, Scott- Lincoln Lancaster County Health Department; Schroeder,, Chris- City of Lincoln; Citta Jr., Joseph L.
Subject: Sheldon Station Monitor Siting Report

Attached is the Sheldon Station SO2 monitor siting report showing the preferred location of the SO2 monitor. I attempted to email the modeling files but due to the size of the attachment the email was rejected by your systems. I will mail a hard copy of the report along with a CD of the modeling files to the NDEQ. If you have any questions please let me know.

Thank you

Jason Vanek, P.E.

Environmental Engineer

Nebraska Public Power District

E-Mail: javanek@nppd.com

Office: (402) 563-5333

Cell: (402) 910-1717

Fax: (402) 563-5168

To: Wiese, Carrie[carrie.wiese@nebraska.gov]
Cc: Wharton, Tracy[tracy.wharton@nebraska.gov]
From: Avey, Lance
Sent: Mon 8/15/2016 4:11:41 PM
Subject: RE: Sheldon Station Monitor Siting Report

Hi Carrie,

Thanks for passing this along. From the technical perspective, this looks good and satisfies the criteria in the Monitoring TAD. Would you be able to pass on the modeling files when NDEQ receives them?

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Wiese, Carrie [mailto:carrie.wiese@nebraska.gov]
Sent: Friday, August 12, 2016 2:24 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Wharton, Tracy <tracy.wharton@nebraska.gov>
Subject: FW: Sheldon Station Monitor Siting Report

Hi Lance,

Attached, please find a draft report from NPPD concerning the monitor siting for Sheldon Station. Does this satisfy the further needs we discussed on the site justification?

Thanks,

Carrie

From: Vanek, Jason A. [mailto:javanek@nppd.com]
Sent: Friday, July 29, 2016 11:00 AM
To: Wiese, Carrie; Wharton, Tracy; Schneider, Shelley
Cc: Holmes,, Scott- Lincoln Lancaster County Health Department; Schroeder,, Chris- City of Lincoln; Citta Jr., Joseph L.
Subject: Sheldon Station Monitor Siting Report

Attached is the Sheldon Station SO2 monitor siting report showing the preferred location of the SO2 monitor. I attempted to email the modeling files but due to the size of the attachment the email was rejected by your systems. I will mail a hard copy of the report along with a CD of the modeling files to the NDEQ. If you have any questions please let me know.

Thank you

Jason Vanek, P.E.

Environmental Engineer

Nebraska Public Power District

E-Mail: javanek@nppd.com

Office: (402) 563-5333

Cell: (402) 910-1717

Fax: (402) 563-5168

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Fri 8/12/2016 4:39:50 PM
Subject: RE: OPPD hourly data

Hi Lisa,

Thanks for passing this along. I think for IDNR, where they are modeling for the DRR, using potentials at Walter Scott and actuals at OPPD is ok under the DRR and for this "separate area analysis". But yes, I will have to confirm.

For OPPD, which is going down the monitor route and the siting is based on normalized CEMs, it would be ideal to use normalized CEMs from Walter Scott too for that analysis. If we can't get normalized CEMs for Walter Scott, I have some ideas to use the Whitmore SO2 and Eppley airport data to see if the "areas are separate". And then maybe you would not need to worry about putting Walter Scott into your modeling.

I am out of the office this afternoon (actually driving up to Nebraska to visit family), but will give you a call Monday to discuss.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Friday, August 12, 2016 10:49 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: FW: OPPD hourly data

Lance:

This just arrived.

I didn't know NDEQ, IDNR and OPPD North Omaha were communicating on this matter.

We now have emission data for the same time frame, but Walter Scott emissions are derived from their maximum

potential SO2 emissions and a 30 - day rolling permit limit that was used to develop hourly emission rates per the

approach outlined in the EPA Guidance for 1 - Hour SO2 modeling TAD. OPPD North Omaha emissions are

from CEMS data. Doesn't this mean we're modeling potential and actual together? Isn 't this an apples to oranges

comparison? Does it matter? Walter Scott's emissions should be more conservative, but how will static velocity

and temperature values factor in, or does that matter?

I'm outside of my experience and comfort zone trying to make a call on this.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

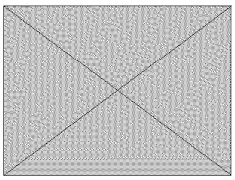
(402) 471-2925

From: HOLMES, ALLAN R [mailto:arholmes@oppd.com]
Sent: Friday, August 12, 2016 10:05 AM
To: matthew.johnson@dnr.iowa.gov
Cc: BAKER, RUSSELL J; Wiese, Carrie; Alam, Lisa
Subject: OPPD hourly data

Matthew,

As we discussed, attached are two Excel spreadsheets with hourly data for Omaha Public Power District (OPPD) North Omaha Station Units 4 and 5. Both spreadsheets include two tabs, one tab has 2013-2015 data and the other tab has 2012 data. Please let me know if you need additional information. Thanks.

Bob



Bob Holmes

Environmental Affairs Administrator

Omaha Public Power District

444 South 16th Street Mall, Omaha NE 68102

(402) 636-2505

arholmes@oppd.com

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Thur 8/4/2016 5:05:09 PM
Subject: RE: OPPD SO2 monitor placement

Hi Lisa,

Thanks for re-modeling. I appreciate you checking and correcting the Whitmore monitor location, it was bugging me for weeks when I would plot the location via AQS.

I think the final steps we have to do:

1) If possible, get normalized CEMS from IA for Walter Scott and place in the current North Omaha modeling, but we do not need to modify the current receptor grid.

2) Run the model and provide me with the output files and I will run the scoring analysis

3) I will pass you back the analysis and we can make a table of the locations of the top 50 scores and map the results

a. If the map and table of this model run with Walter Scott in it looks similar to our current map and table, it likely can be said Walter Scott does not influence the North Omaha area.

4) Provide the scoring table and map to the monitoring folks and they can evaluate the site locations for feasibility.

Do this sound reasonable to you?

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Thursday, August 04, 2016 11:44 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: OPPD SO2 monitor placement

Lance:

I re-ran the OPPD model with the correct monitor location.

I checked the model I sent you earlier, and I did have a receptor for the monitor in the model, but in the AQS location.

I honestly believed I had deleted every last SO2 Google Earth icon before I grabbed that information for the current modeling project. I was wrong.

Still, it won't change the results of the modeling but it will alter slightly the scoring.

I can send this to you, if you believe it's necessary. It's a big file, including the MAXDAILY file, and I'm not certain you require that file.

Talk to you later.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

Nebraska Department of Environmental Quality (NDEQ)

The Atrium Building, Suite 400, 1200 "N" Street, Lincoln, NE 68508-8922

Phone: 402-471-2925 FAX: 402-471-2909

Website: http://deq.ne.gov Click on "Focus on Air"

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Tue 8/2/2016 7:52:54 PM
Subject: RE: Two quick questions: - RE: Scoring analysis for OPPD
scoring.csv

Good questions:

1) The "Score" represents the addition of the "concentration" rank and the "day" rank, as defined in Appendix A of the Monitoring TAD. So yes, you can turn the "Score" into Rankings (1,2,3 …). I am attaching the full Excel file that does the addition of "concentration" rank and the "day" rank so you can see it.

2) I am using R, and what is called the Leaflet function to create my maps. Not sure about Georgia, looks like they are importing the model results into GIS somehow, although Figure 1 of Appendix F looks like they are just marking the "Ranked" locations into GoogleEarth. I think your way to create a GoogleEarth batch file would be fine and work great.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, August 02, 2016 1:27 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: Two quick questions: - RE: Scoring analysis for OPPD

1. What is the "Score (lower values represent top socres) based on? IOW, why are there scores of 7, 10, 11, etc., and not what I would expect to see, scores (ranks) 1, 2, 3, …

2. What mapping program did you and the State of Georgia use to create the blocks of color? I can figure out a way to use spreadsheet as a batch file to create Google Earth batch file,

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, August 02, 2016 8:36 AM
To: Alam, Lisa
Subject: Scoring analysis for OPPD

Hi Lisa,

Attached is the excel sheet for the scoring analysis following the SO2 Monitoring TAD. It has the locations (in UTM coordinates at this time) of the top "Scores" that the maps I sent were made of. Check out Table 1 (page 133) of Appendix E of the Georgia air monitoring plan to see how they go through the siting criteria for the locations of their highest modeling "scores":

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Also, do you think you can run AERMET with adj_u* for the meteorology for the North Omaha run and provide to me the .sfc and .pfl files? EPA is approving adj_u* in situations of relatively

low stacks with elevated terrain nearby (similar to the N. Omaha situation). I am curious if using adj_u* would remove some of the "hits" at the downwind terrain, and thus change the monitor placement scoring analysis.

Thanks, and let me know of questions.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Tue 8/2/2016 3:30:33 PM
Subject: RE: Scoring analysis for OPPD

Thanks Lisa, much appreciated.

Of course, the .zip attachment was flagged and removed from my email. Can you rename it and resend it?

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, August 02, 2016 9:55 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Scoring analysis for OPPD

Lance:

Please find attached Omaha UA-Omaha SA 2011-15 met files processed with the ADJ_U* beta option

I used Trinity Breeze AERMET GUI v. 7.6.0 and included the archived and merge file records, along with the *.sfc and *.pfl files

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, August 02, 2016 8:36 AM
To: Alam, Lisa
Subject: Scoring analysis for OPPD

Hi Lisa,

Attached is the excel sheet for the scoring analysis following the SO2 Monitoring TAD. It has the locations (in UTM coordinates at this time) of the top "Scores" that the maps I sent were made of. Check out Table 1 (page 133) of Appendix E of the Georgia air monitoring plan to see how they go through the siting criteria for the locations of their highest modeling "scores":

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Also, do you think you can run AERMET with adj_u* for the meteorology for the North Omaha run and provide to me the .sfc and .pfl files? EPA is approving adj_u* in situations of relatively low stacks with elevated terrain nearby (similar to the N. Omaha situation). I am curious if using adj_u* would remove some of the "hits" at the downwind terrain, and thus change the monitor placement scoring analysis.

Thanks, and let me know of questions.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: lisa.alam@nebraska.gov[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Tue 8/2/2016 1:36:03 PM
Subject: Scoring analysis for OPPD
Score_TAD.xlsx

Hi Lisa,

Attached is the excel sheet for the scoring analysis following the SO2 Monitoring TAD. It has the locations (in UTM coordinates at this time) of the top "Scores" that the maps I sent were made of. Check out Table 1 (page 133) of Appendix E of the Georgia air monitoring plan to see how they go through the siting criteria for the locations of their highest modeling "scores":

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Also, do you think you can run AERMET with adj_u* for the meteorology for the North Omaha run and provide to me the .sfc and .pfl files? EPA is approving adj_u* in situations of relatively low stacks with elevated terrain nearby (similar to the N. Omaha situation). I am curious if using adj_u* would remove some of the "hits" at the downwind terrain, and thus change the monitor placement scoring analysis.

Thanks, and let me know of questions.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: lisa.alam@nebraska.gov[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Wed 7/27/2016 2:59:26 PM
Subject: Walter Scott Protocol
WalterScott_ModelingProtocol_121115.pdf

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

TECHNICAL MEMORANDUM

MidAmerican Walter Scott Jr. Energy Center SO_2 Modeling Protocol

PREPARED FOR: MidAmerican Energy Company

PREPARED BY: CH2M HILL

DATE: November 23, 2015

MidAmerican Energy Company retained CH2M to conduct air dispersion modeling to aid in the attainment designation for the 2010 sulfur dioxide (SO_2) 1-hour National Ambient Air Quality Standard (NAAQS) in the area around its Walter Scott Jr. Energy Center. This modeling protocol is being prepared for the Iowa Department of Natural Resources (IDNR) for review and comment on the dispersion modeling approach proposed to demonstrate attainment with the standard.

The methods and approach to the dispersion modeling analysis are consistent with the Environmental Protection Agency (EPA) Guideline on Air Quality Models[1], IDNR Modeling Guidance[2], and the 1-hr SO_2 Modeling Technical Assistance Document[3].

Dispersion Model

The EPA recommended AERMOD modeling system is proposed for the analysis. The AERMOD model (Version 15181) will be used with regulatory default options as recommended in the EPA Guideline on Air Quality Models. The following supporting pre-processing programs for AERMOD are also proposed:

- BPIP-Prime (Version 04274)
- AERMET (Pre-processed by IDNR, Version 15181)
- AERMAP (Pre-processed by IDNR)

If there is version change to AERMOD prior to submitting the modeling analysis to IDNR, the most recent version of AERMOD will be utilized.

AERMOD is a steady-state plume model that simulates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. This model is recommended for short-range (< 50 kilometers [km]) dispersion from the source. The model incorporates the Plume Rise Model Enhancement (PRIME) algorithm for modeling building downwash. AERMOD is designed to accept input data prepared by two specific pre-processor programs, AERMET and AERMAP. AERMOD will be run with the following options:

- Regulatory default options
- Direction-specific building downwash characterized by BPIP-PRIME
- Actual receptor elevations and hill height scales obtained from IDNR and preprocessed by AERMAP

---

[1] U.S. Environmental Protection Agency (EPA). 2005. *Appendix W of 40 CFR Part 51—Guideline On Air Quality Models (Revised)*, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, November.

[2] IDNR, 2014. *Air Dispersion Modeling Guidelines – For Non-PSD, Pre-construction Permit Applications.* Environmental Services Division. Air Quality Bureau. Version 12-19-2014.

[3] EPA. 2013a. *Draft SO_2 NAAQS Designations Modeling Technical Assistance Document.* Office of Air and Radiation, Office of Air Quality Planning and Standards, Air Quality Assessment Division. December

- SO_2 pollutant keyword

Receptor Grid

Receptors were supplied by IDNR and are sited outside of the fence line boundary of the Walter Scott Jr. Energy Center. Receptor placement grid spacing is:

- 50 meters along the facility fence line
- 50 meters from the fence line to 0.5 km
- 100 meters extending from 0.5 km to 1.5 km
- 250 meters extending from 1.5 km to 3 km
- 500 meters extending from 3 km to 5 km

Consistent with Section 4.2 of EPA's December 2013 draft *SO_2 NAAQS Designations Modeling Technical Assistance Document,* receptors were not placed on water bodies within the gridded area. This would include removing receptors on the adjacent Missouri River. Figure 1 shows the receptor grid for the modeling analysis.

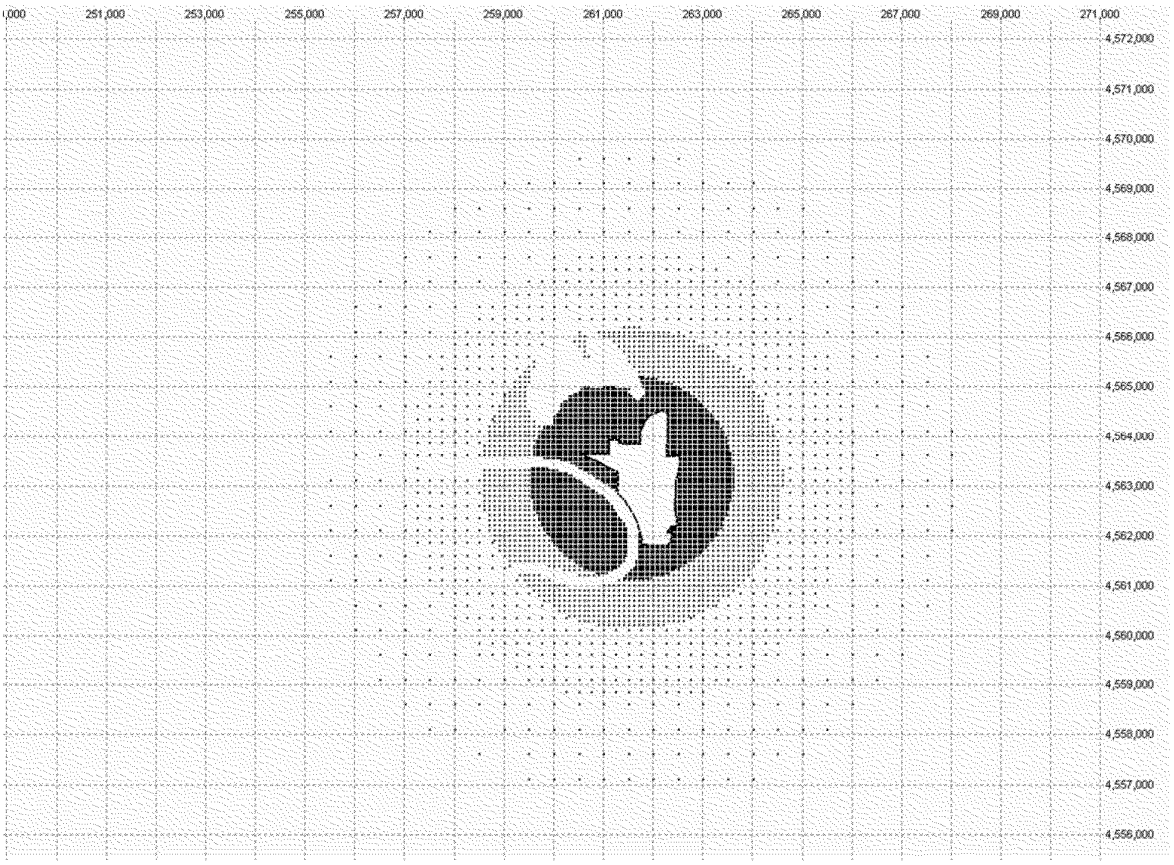


Figure 1. Modeling Receptor Grid

Meteorological Data

Hourly meteorological data for the dispersion modeling analysis were obtained from IDNR. These data were pre-processed with the AERMET program by IDNR. The data were collected from the Omaha, NE (KOMA) station for calendar years 2012 through 2014 and are considered representative of the

conditions near the Walter Scott, Jr. Energy Center. Figure 2 shows the 3-year wind rose for the KOMA station.

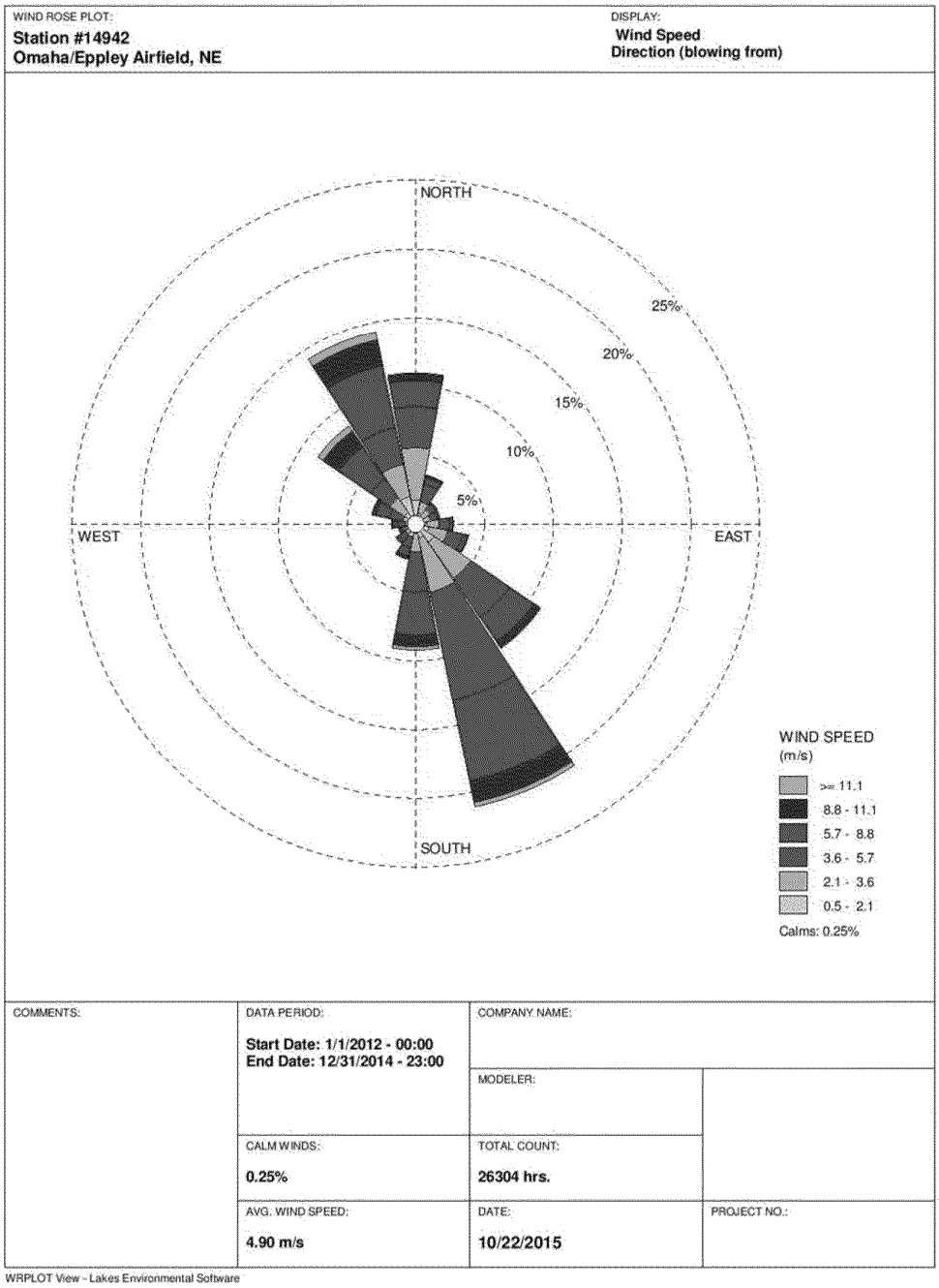


Figure 2. KOMA 3-year Wind Rose (2012-2014)

Background Concentration

IDNR Modeling guidance[4] recommends a statewide 1-hour SO_2 background concentration of 7 micrograms per cubic meter ($\mu g/m^3$). This conservative concentration will be added to the model design value for comparison to the 1-hour SO_2 NAAQS.

Model Design Value

The model design value will be used in conjunction with representative background concentrations for comparison to the NAAQS. For SO_2, consistent with EPA guidance[5], the receptor with the highest 3-year average of the 99th percentile maximum daily 1-hour modeled concentration will be added to the background concentration identified above. AERMOD internally calculates the 3-year average of the 99th percentile 1-hour concentration at each receptor using the SO_2 pollutant keyword[6].

Nearby Sources of SO_2

IDNR requested the nearby OPPD North Omaha Station be included in the 1-hour SO_2 modeling demonstration. No other sources of SO_2 were requested to be included in the modeling analysis and regional or small sources of SO_2 would be considered to be included in the background concentration.

Source Characterization and Emission Rates

Both the MidAmerican Walter Scott, Jr. Energy Center and OPPD North Omaha Station include a number of emission units that emit SO_2. All emission units modeled in AERMOD will be characterized as point sources. Table 1 summarizes the emission units and stack characteristics to be used in the 1-hour SO_2 modeling demonstration. Small sources of SO_2, such as emergency generators and comfort heating, will not be included in the analysis as concentrations from these small sources of SO_2 would be considered as part of the background.

Table 1. Walter Scott, Jr. Energy Center and Omaha Public Power District Point Source Exhaust Characteristics

Model ID	Unit Description	UTM Easting (m)	UTM Northing (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exhaust Temperature (K)	Exhaust Velocity (m/s)
EP003	WS Unit 3	261,898.22	4,562,476.92	294.72	167.64	7.62	355.37	28.977
EP141	WS Unit 4	262,145.9	4,562,589.8	294.70	167.945	7.5286	347.04	24.917
EP142	WS Unit 4 Aux. Boiler	262,017.0	4,562,476.0	294.50	88.392	1.753	427.59	20.537
OPPDA	Units 1-3	253,446.59	4,579,479.15	303.581	62.1792	4.42	422	36.58
OPPDB	Unit 4	253,421.41	4,579,505.24	303.581	62.1792	2.93	422	36.88
OPPDC	Unit 5	253,401.92	4,579,524.45	303.581	62.1792	3.51	422	36.58

[4] http://www.iowadnr.gov/InsideDNR/RegulatoryAir/Modeling/DispersionModeling/BackgroundData.aspx. Accessed December 2015.

[5] EPA. 2013a. *Draft SO_2 NAAQS Designations Modeling Technical Assistance Document*. Office of Air and Radiation, Office of Air Quality Planning and Standards, Air Quality Assessment Division. December

[6] EPA. 2015. *Addendum: Users Guide for the AMS/EPA Regulatory Model – AERMOD.* Office of Air Quality Planning and Standards. Research Triangle Park, NC. June.

Table 1. Walter Scott, Jr. Energy Center and Omaha Public Power District Point Source Exhaust Characteristics

Model ID	Unit Description	UTM Easting (m)	UTM Northing (m)	Base Elevation (m)	Stack Height (m)	Stack Diameter (m)	Exhaust Temperature (K)	Exhaust Velocity (m/s)

Notes:
WS: Walter Scott, Jr. Energy Center
OPPD: Omaha Public Power District North Omaha Station
m: meters
K: degrees Kelvin
m/s: meters per second
Aux: auxiliary

The emission units at Walter Scott Jr. Energy Center will be modeled at their maximum potential SO_2 hourly emission rates.

The Unit 4 Auxiliary Boiler is considered a natural gas unit. Its modeled emission rate reflect potential SO_2 emissions while utilizing natural gas as a fuel.

For Walter Scott Unit 3 and Unit 4, the current 30-day rolling permit limits were used to develop an hourly emission rate per the approach outlined in the EPA G*uidance for 1-Hour SO_2 Nonattainment Area [State Implementation Plan] Submissions* memorandum released on April 23, 2014.

Based on this guidance, the following approach is proposed to develop a 1-hour emission rate for the attainment demonstration modeling of the two units.

1. Review existing continuous emission monitoring data for each unit to develop a ratio of 30-day rolling averages to hourly emissions The ratio would be developed as 99th percentile of the five year data from 2010 to 2014.
2. Use the ratio to develop hourly emission rate using the current 30-day rolling permit limit.
3. Utilize the 1-hour emission rate to demonstrate compliance with the standard with modeling.

The three step approach above resulted in a ratio of 0.8174 for Unit 3 and 0.8436 for Unit 4. The current 30-day rolling average emission limits of 0.4 lbs/mmBtu for Unit 3 and 0.1 lbs/mmBtu for Unit 4 were then converted to pound per hour rates. The ratios calculated above were then applied to these pound per hour emission rates as listed in Table 2 below, and used in the modeling analysis.

Emission rates for the OPPD North Omaha Station were supplied by IDNR[7] and reflect maximum measured 1-hour average emission rates reported on the USEPA, Clean Air Markets.

Table 2 summarizes the emissions to be used in the analysis.

Table 2. Modeled SO_2 Emission Rate

Model ID	Unit Description	SO_2 Emission Rate (lb/hr)
EP003	Walter Scott, Jr. Energy Center Unit 3	3,768.0
EP141	Walter Scott, Jr. Energy Center Unit 4	909.79
EP142	Walter Scott, Jr. Energy Center Unit 4 Aux. Boiler	0.21

[7] Email from Jennifer Krzak/IDNR to Joshua Mohr/MidAmerican. Subject: *OPPD Potential Rates.* October 6, 2015.

Table 2. Modeled SO_2 Emission Rate

Model ID	Unit Description	SO_2 Emission Rate (lb/hr)
OPPDA	OPPD North Omaha Station Units 1-3	1,409.9
OPPDB	OPPD North Omaha Station Unit 4	651.6
OPPDC	OPPD North Omaha Station Unit 5	994.2

Note:
OPPD: Omaha Public Power District
lb/hr: pounds per hour
Emission rates reflect maximum CEM data

OPPD Emission Rate Consideration

As described above, the OPPD Omaha North Station emission rates are based on maximum hourly emissions from 2012 through 2014. These emissions will be used in the analysis to demonstrate attainment with the standard and represent a conservative estimate for the attainment analysis. OPPD plans on retiring Units 1-3 (Stack OPPDA) by April 2016 to coincide with the expiration of their extension for compliance under the Mercury and Air Toxics Standard (MATS). If the OPPD emissions increase significantly in the future compared to what is being modeled, a revised modeling analysis may be required to demonstrate attainment with the 1-hour SO2 NAAQS. IDNR will track the emissions from the OPPD Omaha North Station and notify MidAmerican Energy Company if additional modeling would be warranted.

Presentation of Results

The results of the air dispersion modeling analyses will be presented as follows:

- A description of modeling methodologies and input data
- A summary of the results in tabular and, where appropriate, graphical and narrative form
- Modeling files used for AERMOD will be provided on a CD-ROM
- Any significant deviations from the methodology proposed in this protocol will be presented

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Mon 7/18/2016 7:18:53 PM
Subject: RE: Oh My Dog! plot file is in ASCII format
scoring.csv

Hi Lisa,

I am attaching a csv file for North Omaha that replicates the "scoring" strategy laid out in Appendix A of the SO2 Monitoring TAD. It is laid out similar to the output on page A-8 of TAD using your Aermod output for the full 11506 receptor domain.

You can take this file and graph and analyze the locations and scores any way you would like.

Have a look and we can chat anytime about the results.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 2:00 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: Oh My Dog! plot file is in ASCII format

Oh yes, of course, R programing code. Why didn't I think of that? :□/

And OAQPS is right, Kansas City is boring, but then so was Atlanta, GA.

Actually, any city is boring if you're stuck in a boring part of town.

When you, if you, can retrieve an excel file, could you share that with me? Will you then drop that into AIRPLOT?

OMG – the plot file is in ASCII format, and shouldn't that be the path to sorting this out? I mean, it's sorted by receptor, and lists the H1H … to

* AERMOD (15181): OPPD North Omaha 07/12/16

* AERMET (15181): SO2 Monitor Placement NDVs, MAXDAILY
13:40:18

* MODELING OPTIONS USED: RegDFAULT CONC ELEV RURAL

* PLOT FILE OF 1ST-HIGHEST MAX DAILY 1-HR VALUES AVERAGED OVER 3 YEARS FOR SOURCE GROUP: ALL

* FOR A TOTAL OF 271 RECEPTORS.

* FORMAT:
(3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,A5,5X,A8,2X,10(F13.5,2X,I8.8,2X:))

* X Y AVERAGE CONC ZELEV ZHILL ZFLAG AVE GRP RANK NET ID AVER CONC YR1 DATE YR1 AVER CONC YR2 DATE YR2 AVER CONC YR3 DATE YR3

* _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

247161.10000 4584015.00000 2.17095 402.17 402.17 0.00 1-HR ALL
1ST 1.87993 13120203 1.98256 14010905 2.65037 15121905

248661.10000 4579765.00000 2.01954 392.84 392.84 0.00 1-HR ALL
1ST 1.76150 13082221 1.68602 14060421 2.61109 15081002

250911.10000 4578265.00000 1.89057 375.19 375.19 0.00 1-HR ALL
1ST 1.11044 13032904 2.11514 14103120 2.44612 15070721

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Wednesday, July 13, 2016 12:14 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Yep, I am going to try and crank through the MAXDAILY file using R programming code and output the results into Excel.

On the RSL meeting, I will ask about Abode Connect. It seems like that would an easy option and one OAQPS may be thinking of. We have mentioned hosting RSL type meetings in Kansas City, but we always get the feel that OAQPS feels the Kansas City area is too boring.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 11:51 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

I have the MAXDAILY output files for 1760 receptors and 800 receptors – but those files are huge, however, the program runs in under 3 minutes. Even using all the receptors (11,000+ receptors) the program only takes about 20 minutes, however, you'd never be able to open the MAXDAILY output file without a split file utility.

OFF TOPIC

****

New Orleans as the location for the 2016 RSL Modelers' Workshop is a pricy location. Why not Kansas City? I'm hearing rumors that Nebraska is running out of funds for travel to workshops, training, etc., so I probably won't be going to the workshop this year anyway, however, if it could be held in Kansas City … I would attend on my own dime.

Do you think EPA Region 7 would consider a regional "re-presentation" of the 2016 RSL Modelers' Workshop? Or maybe OAQPS would consider using a service like Adobe Connect from New Orleans? Adobe Connect can accommodate up to 1500 people, or so they say, and it's a whole lot cheaper than flying to New Orleans.

Review of Adobe Connect http://www.reviews.com/web-conferencing-services/adobe-connect/

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Wednesday, July 13, 2016 10:16 AM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thanks for passing this along and doing this. I know it is a different type of analysis and it looks like you are on the right track. I am going to take a look and see if I can provide you the "ranks" analysis of the receptors in MS Excel or Access and provide a graphic.

I will let you know how it goes.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 8:44 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Try as I might, I couldn't duplicate the efforts outlined in the Feb 2016 monitoring TAD, Appendix A. Evidently, I don't have the tools required to produce that kind of an analysis.

I want to process the 3-year average of each year's 4th daily highest (or 1st daily highest, doesn't really matter) 1-hour maximum concentration, but I want those results to be receptor by receptor, correct?

As you suggested, I tried **MAXDAILY**. Using 200 receptors the results aren't spatially aligned, not receptor by receptor, nor are the results a 3-year average. Isn't that what I want? The same receptor, averaged over three years?

Then I tried MXDYBYYR, MAXDCONT, and so on. No results I believe I can use.

Using Trinity Breeze 3D Analyst only pulls values for a single day, month, year. Not the same thing.

If this is a matter of pulling data into Excel to finish the analysis, then how do I accomplish that, without having the receptors numbered, easily identified? I tried to use the sort function in Excel, sorting XUTM, then YUTM, and came up with huge numbers

of results, from various hours, days, months, for the **same receptor**.

I believe what I want to plot is:

	2013 CONC	2014 CONC	2015 CONC	3-YEAR AVE
RECEPTOR	ug/m3	ug/m3	ug/m3	ug/m3
1	xth highest daily	and so on ……..		
in 2013				

So, what am I doing wrong?

Attached is the AERMOD input file for 200 receptors; MAXDAILY, H1H, and a zipped copy of the output file (*.wat) created by that run, in case you want to take a look.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:40 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Yes, it did. Thanks!

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 12:30 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

did this work?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:21 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thank you for putting this together. Our system flags and removes attachment ending in ".zip". Can you rename it to ".piz" or something different than ".zip" and resend.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 10:01 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Attached is the SO2 monitor placement model using TAD Monitoring Guidance document as recommended.

I ran the model for the 1-hour, 24-hour, and annual averaging periods, using

CEMs normalized emissions,

concurrent 2013-15 Omaha-Omaha met data

USGS NED terrain (not attached)

20 km grid - spaced 250 meters from the facility to 10 km and 500 meters from 10 km to 20 km

I deleted onsite receptors, however, receptors over the Missouri River, wetlands and sand barges along river, Carter Lake, Eppley and No. Omaha airfields were included in the model. I left these in because I don't believe I have enough control/accuracy to zero in on the appropriate receptors using Trinity Breeze's GUI. Trinity's approach is to do a "print screen" of Google Earth, and pull the image file into AERMOD. I can give it a try, but the placement could be off as much as 100 to 200 meters using their approach, the approximate width of the Missouri River. If you have a better approach, please let me know – and send me a copy of the edited AERMOD input file.

If you have any questions feel free to call. I didn't include the NED file due to its size, but I can easily send it upon request.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, June 30, 2016 3:56 PM
To: Alam, Lisa
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Wed 7/13/2016 5:14:14 PM
Subject: RE: Modeling for Siting Examples

Yep, I am going to try and crank through the MAXDAILY file using R programming code and output the results into Excel.

On the RSL meeting, I will ask about Abode Connect. It seems like that would an easy option and one OAQPS may be thinking of. We have mentioned hosting RSL type meetings in Kansas City, but we always get the feel that OAQPS feels the Kansas City area is too boring.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 11:51 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

I have the MAXDAILY output files for 1760 receptors and 800 receptors – but those files are huge, however, the program runs in under 3 minutes. Even using all the receptors (11,000+ receptors) the program only takes about 20 minutes, however, you'd never be able to open the MAXDAILY output file without a split file utility.

OFF TOPIC

****

New Orleans as the location for the 2016 RSL Modelers' Workshop is a pricy location. Why not Kansas City? I'm hearing rumors that Nebraska is running out of funds for travel to workshops, training, etc., so I probably won't be going to the workshop this year anyway, however, if it could be held in Kansas City … I would attend on my own dime.

Do you think EPA Region 7 would consider a regional "re-presentation" of the 2016 RSL Modelers' Workshop? Or maybe OAQPS would consider using a service like Adobe Connect from New Orleans? Adobe Connect can accommodate up to 1500 people, or so they say, and it's a whole lot cheaper than flying to New Orleans.

Review of Adobe Connect http://www.reviews.com/web-conferencing-services/adobe-connect/

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Wednesday, July 13, 2016 10:16 AM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thanks for passing this along and doing this. I know it is a different type of analysis and it looks like you are on the right track. I am going to take a look and see if I can provide you the "ranks" analysis of the receptors in MS Excel or Access and provide a graphic.

I will let you know how it goes.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 8:44 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Try as I might, I couldn't duplicate the efforts outlined in the Feb 2016 monitoring TAD, Appendix A. Evidently, I don't have the tools required to produce that kind of an analysis.

I want to process the 3-year average of each year's 4th daily highest (or 1st daily highest, doesn't really matter) 1-hour maximum concentration, but I want those results to be receptor by receptor, correct?

As you suggested, I tried **MAXDAILY**. Using 200 receptors the results aren't spatially aligned, not receptor by receptor, nor are the results a 3-year average. Isn't that what I want? The same receptor, averaged over three years?

Then I tried MXDYBYYR, MAXDCONT, and so on. No results I believe I can use.

Using Trinity Breeze 3D Analyst only pulls values for a single day, month, year. Not the same thing.

If this is a matter of pulling data into Excel to finish the analysis, then how do I accomplish that, without having the receptors numbered, easily identified? I tried to use the sort function in Excel, sorting XUTM, then YUTM, and came up with huge numbers of results, from various hours, days, months, for the **same receptor**.

I believe what I want to plot is:

	2013 CONC	2014 CONC	2015 CONC	3-YEAR AVE
RECEPTOR	ug/m3	ug/m3	ug/m3	ug/m3
1	xth highest daily	and so on ……..		
in 2013				

So, what am I doing wrong?

Attached is the AERMOD input file for 200 receptors; MAXDAILY, H1H, and a zipped copy of the output file (*.wat) created by that run, in case you want to take a look.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:40 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Yes, it did. Thanks!

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 12:30 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

did this work?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:21 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thank you for putting this together. Our system flags and removes attachment ending in ".zip". Can you rename it to ".piz" or something different than ".zip" and resend.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 10:01 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Attached is the SO2 monitor placement model using TAD Monitoring Guidance document as recommended.

I ran the model for the 1-hour, 24-hour, and annual averaging periods, using

CEMs normalized emissions,

concurrent 2013-15 Omaha-Omaha met data

USGS NED terrain (not attached)

20 km grid - spaced 250 meters from the facility to 10 km and 500 meters from 10 km to 20 km

I deleted onsite receptors, however, receptors over the Missouri River, wetlands and sand barges along river, Carter Lake, Eppley and No. Omaha airfields were included in the model. I left these in because I don't believe I have enough control/accuracy to zero in on the appropriate receptors using Trinity Breeze's GUI. Trinity's approach is to do a "print screen" of Google Earth, and pull the image file into AERMOD. I can give it a try, but the placement could be off as much as 100 to 200 meters using their approach, the approximate width of the Missouri River. If you have a better approach, please let me know – and send me a copy of the edited AERMOD input file.

If you have any questions feel free to call. I didn't include the NED file due to its size, but I can easily send it upon request.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, June 30, 2016 3:56 PM
To: Alam, Lisa
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Wed 7/13/2016 3:16:26 PM
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thanks for passing this along and doing this. I know it is a different type of analysis and it looks like you are on the right track. I am going to take a look and see if I can provide you the "ranks" analysis of the receptors in MS Excel or Access and provide a graphic.

I will let you know how it goes.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, July 13, 2016 8:44 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Try as I might, I couldn't duplicate the efforts outlined in the Feb 2016 monitoring TAD, Appendix A. Evidently, I don't have the tools required to produce that kind of an analysis.

I want to process the 3-year average of each year's 4th daily highest (or 1st daily highest, doesn't really matter) 1-hour maximum concentration, but I want those results to be receptor by receptor, correct?

As you suggested, I tried **MAXDAILY**. Using 200 receptors the results aren't spatially aligned, not receptor by receptor, nor are the results a 3-year average. Isn't that what I want? The same receptor, averaged over three years?

Then I tried MXDYBYYR, MAXDCONT, and so on. No results I believe I can use.

Using Trinity Breeze 3D Analyst only pulls values for a single day, month, year. Not the same thing.

If this is a matter of pulling data into Excel to finish the analysis, then how do I accomplish that, without having the receptors numbered, easily identified? I tried to use the sort function in Excel, sorting XUTM, then YUTM, and came up with huge numbers of results, from various hours, days, months, for the **same receptor**.

I believe what I want to plot is:

	2013 CONC	2014 CONC	2015 CONC	3-YEAR AVE
RECEPTOR	ug/m3	ug/m3	ug/m3	ug/m3
1	xth highest daily	and so on ……..		
in 2013				

So, what am I doing wrong?

Attached is the AERMOD input file for 200 receptors; MAXDAILY, H1H, and a zipped copy of the output file (*.wat) created by that run, in case you want to take a look.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:40 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Yes, it did. Thanks!

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 12:30 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

did this work?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:21 PM
To: Alam, Lisa
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thank you for putting this together. Our system flags and removes attachment ending in ".zip". Can you rename it to ".piz" or something different than ".zip" and resend.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 10:01 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Attached is the SO2 monitor placement model using TAD Monitoring Guidance document as recommended.

I ran the model for the 1-hour, 24-hour, and annual averaging periods, using

CEMs normalized emissions,

concurrent 2013-15 Omaha-Omaha met data

USGS NED terrain (not attached)

20 km grid - spaced 250 meters from the facility to 10 km and 500 meters from 10 km to 20 km

I deleted onsite receptors, however, receptors over the Missouri River, wetlands and sand barges along river, Carter Lake, Eppley and No. Omaha airfields were included in the model. I left these in because I don't believe I have enough control/accuracy to zero in on the appropriate receptors using Trinity Breeze's GUI. Trinity's approach is to do a "print screen" of Google Earth, and pull the image file into AERMOD. I can give it a try, but the placement could be off as much as 100 to 200 meters using their approach, the approximate width of the Missouri River. If you have a better approach, please let me

know – and send me a copy of the edited AERMOD input file.

If you have any questions feel free to call. I didn't include the NED file due to its size, but I can easily send it upon request.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, June 30, 2016 3:56 PM
To: Alam, Lisa
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Mon 7/11/2016 5:39:38 PM
Subject: RE: Modeling for Siting Examples

Yes, it did. Thanks!

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 12:30 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

did this work?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, July 11, 2016 12:21 PM
To: Alam, Lisa

Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thank you for putting this together. Our system flags and removes attachment ending in ".zip". Can you rename it to ".piz" or something different than ".zip" and resend.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 10:01 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Attached is the SO2 monitor placement model using TAD Monitoring Guidance document as recommended.

I ran the model for the 1-hour, 24-hour, and annual averaging periods, using

CEMs normalized emissions,

concurrent 2013-15 Omaha-Omaha met data

USGS NED terrain (not attached)

20 km grid - spaced 250 meters from the facility to 10 km and 500 meters from 10 km to 20 km

I deleted onsite receptors, however, receptors over the Missouri River, wetlands and sand barges along river, Carter Lake, Eppley and No. Omaha airfields were included in the model. I left these in because I don't believe I have enough control/accuracy to zero in on the appropriate receptors using Trinity Breeze's GUI. Trinity's approach is to do a "print screen" of Google Earth, and pull the image file into AERMOD. I can give it a try, but the placement could be off as much as 100 to 200 meters using their approach, the approximate width of the Missouri River. If you have a better approach, please let me know – and send me a copy of the edited AERMOD input file.

If you have any questions feel free to call. I didn't include the NED file due to its size, but I can easily send it upon request.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, June 30, 2016 3:56 PM
To: Alam, Lisa
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Mon 7/11/2016 5:21:17 PM
Subject: RE: Modeling for Siting Examples

Hi Lisa,

Thank you for putting this together. Our system flags and removes attachment ending in ".zip". Can you rename it to ".piz" or something different than ".zip" and resend.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, July 11, 2016 10:01 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: Modeling for Siting Examples

Lance:

Attached is the SO2 monitor placement model using TAD Monitoring Guidance document as recommended.

I ran the model for the 1-hour, 24-hour, and annual averaging periods, using

CEMs normalized emissions,

concurrent 2013-15 Omaha-Omaha met data

USGS NED terrain (not attached)

20 km grid - spaced 250 meters from the facility to 10 km and 500 meters from 10 km to 20 km

I deleted onsite receptors, however, receptors over the Missouri River, wetlands and sand barges along river, Carter Lake, Eppley and No. Omaha airfields were included in the model. I left these in because I don't believe I have enough control/accuracy to zero in on the appropriate receptors using Trinity Breeze's GUI. Trinity's approach is to do a "print screen" of Google Earth, and pull the image file into AERMOD. I can give it a try, but the placement could be off as much as 100 to 200 meters using their approach, the approximate width of the Missouri River. If you have a better approach, please let me know – and send me a copy of the edited AERMOD input file.

If you have any questions feel free to call. I didn't include the NED file due to its size, but I can easily send it upon request.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Thursday, June 30, 2016 3:56 PM
To: Alam, Lisa
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: lisa.alam@nebraska.gov[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Thur 6/30/2016 8:56:22 PM
Subject: Modeling for Siting Examples

Hi Lisa,

It would be recommended to go through the modeling siting demonstration for North Omaha similar to the one in the SO2 Monitoring TAD (Appendix A):

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2MonitoringTAD.pdf

and like the State of Georgia did (see pages 111-139) for a SO2 DRR source:

http://amp.georgiaair.org/docs/2016%20Ambient%20Air%20Monitoring%20Plan.pdf

Of course, it would best to use varying emissions (normalized), exit velocities (if available), and stack temperature (if available) over a 3-yr period. This along with the historical information on the Whitmore site you provided should make for a good analysis.

I am writing because I will be out of the office tomorrow and all of next week. I have done this modeling process before, and did not take too long. So I am willing to help. If you have questions, I will be able to answer via email next week.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Fri 6/24/2016 4:45:32 PM
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Thanks Lisa, got the protocol. I will let know of any comments from me by Monday (June, 27th).

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Thursday, June 23, 2016 9:38 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: FW: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lance:

Attached is the final protocol for Whelan due July 1, 2016. If you have any comments or changes, let me know so these can be addressed before July 1st.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Liebsch, Ed [mailto:Ed.Liebsch@hdrinc.com]
Sent: Tuesday, June 21, 2016 11:03 AM
To: Alam, Lisa
Cc: 'Marty Stange'; 'Jason Redding'; Wiese, Carrie
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lisa,

As we discussed this morning, attached is a revised, final modeling protocol. The only change from the last version we submitted to you is in the section on background concentrations. As we agreed, and as suggested by EPA, we are now proposing to use background concentrations from a rural SO2 monitor in southern Iowa, in Van Buren County. We will use the 2013-2015 data from this site, which are quite similar to the earlier 2011-2013 data from the Trego County, Kansas monitor site.

Please let me know if you have any further questions.

Ed

Ed Liebsch, V.P.

Senior Air Quality Scientist

HDR

701 Xenia Avenue South, Suite 600
Minneapolis, MN
D 763.591.5452 M 612.616.3719
ed.liebsch@hdrinc.com

hdrinc.com/follow-us

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, June 07, 2016 11:46 AM
To: Liebsch, Ed
Cc: 'Marty Stange'; 'Jason Redding'; Wiese, Carrie
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Ed:

As you know, there will be many pairs of eyes on this 1-hour SO2 SIP model that will be used to determine the 1-hour SO2 area designation; attainment, nonattainment, unclissifiable. It's in everyone's best interest to demonstrate attainment, and to do it in a way that would minimize or eliminate any comments requiring clarification, interpretation, analyses, etc., during the public comment period in early 2017.

Background

The TAD Document (https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf) talks explicitly about using the most recent three years of data; emissions, meteorology, ***and*** background DVs.

I agree with your contention that the 2014 SO2 monitor in Kansas, Trego County has suspect data. In the last round of modeling, the Trego County SO2 monitor (2011-13 DV) was used with EPA Region 7 knowledge, as it was only one year short of being the most recent 3 years of data, however, this time Trego would be two years out of sync, making the use of this monitor more problematic. The background concentration takes into account natural concentrations and concentrations from nearbys not explicitly modeled, and human activity changes over time. It would be a challenging task to confirm activity in the area of the Trego County has not changed since 2013 and that 2011-13 data is representative of the Hastings, NE area. This means we must find and agree on an alternative SO2 monitor.

There are three possible SO2 monitors that could give reasonable background DVs:

1. SD, Union County, Site ID# 461270001
2. IA, Van Buren County, Site ID# 194770006
3. IA, Polk County, Site ID# 191530030

Most conservative alternative

SD, Union County, Site ID# 461270001

3-yr DV **5.00 ppb or 13.09 ug/m3**

Less conservative alternative - average of the two Iowa monitors

IA, Van Buren County, Site ID# 194770006

3-yr DV 3.00ppb or 7.86 ug/m3

IA, Polk County, Site ID# 191530030

3-yr DV 1.33ppb or 3.49 ug/m3

3-yr DV **3.00 ppb or 5.67 ug/m3**

Least conservative alternative

IA, Polk County, Site ID# 191530030

3-yr DV **1.33 ppb or 3.49 ug/m3**

Using the Polk County alternative above would likely require additional examination of issues like climate, land use, population, and so on to demonstrate this monitor is representative of the Hastings, NE area.

AGP CEMs data

Have you made any progress obtaining AGP's CEMs data? As briefly discussed, it would be more expedient for you to contact AGP directly. The Department can request the data, but I feel you would receive more cooperation from AGP with a direct request.

I look forward to hearing from you.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Liebsch, Ed [mailto:Ed.Liebsch@hdrinc.com]
Sent: Friday, June 03, 2016 2:58 PM
To: Alam, Lisa
Cc: 'Marty Stange'; 'Jason Redding'; Ellis, Todd
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lisa,

Attached is the revised protocol, incorporating your comments on updating the met data as well as the receptor grid. I've not changed the proposed background concentration, per my discussion in the e-mail chain below, but if you want to discuss it further, that will have to wait till I get back in the office later next week. I'm out Monday thru Thursday AM (helping my daughter move).

Hope you enjoyed your week away!

Ed

Ed Liebsch, V.P.

Senior Air Quality Scientist

HDR

701 Xenia Avenue South, Suite 600
Minneapolis, MN
D 763.591.5452 M 612.616.3719
ed.liebsch@hdrinc.com

hdrinc.com/follow-us

From: Liebsch, Ed
Sent: Thursday, June 02, 2016 1:38 PM

To: Alam, Lisa
Cc: Marty Stange; Jason Redding; Ellis, Todd
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lisa, as I just discussed with Todd, we had some old (and incorrect) data for AGP when we did a test run to make sure the model worked. But we've now updated the building and stack heights for AGP, and it is looking like we will be fine at receptors around them and the other nearby sources to be included in the modeling. So our challenge will be the impacts nearer Whelan, which hopefully will be fine once we start running actual hourly emissions data for that facility.

We'll get the revised draft protocol back to you shortly with appropriate changes as discussed in the chain below.

Ed

Ed Liebsch, V.P.

Senior Air Quality Scientist

HDR

701 Xenia Avenue South, Suite 600
Minneapolis, MN
D 763.591.5452 M 612.616.3719
ed.liebsch@hdrinc.com

hdrinc.com/follow-us

From: Liebsch, Ed
Sent: Tuesday, May 31, 2016 10:21 AM
To: 'Alam, Lisa'
Cc: Marty Stange; Jason Redding; Ellis, Todd
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lisa,

I'll work with Todd (and AGP if needed) to help refine the AGP inputs.

The only other item I am wanting to discuss further is the possible use of 2014 data for background SO2

concentration. This morning I went into the EPA's AirData database and retrieved the graph below. These are the same data as shown in our earlier analysis last year, and show very obviously that the 2014 data are still bogus (they have not been changed from the earlier data). For 2014, the 99th percentile (4 high daily maximum) of 10 ppb occurred in late July when the instrument was experiencing a large upward zero drift. We can see from the graph below that someone tried to fix the problem in early August, and then again in October.

I believe we "ran to ground" this issue during the prior protocols, with EPA Region 7 and KDHE staff both agreeing that the 2014 data are suspect. I would not want to revert to using bad data for this protocol, as that may imply to some people that the prior protocols were inappropriate regarding the background concentration. However, to provide an updated analysis using the new 2015 data, I propose that we now average the 2012, 2013, and 2015 Trego data for the background 1-hour SO2 for the Whelan analysis.

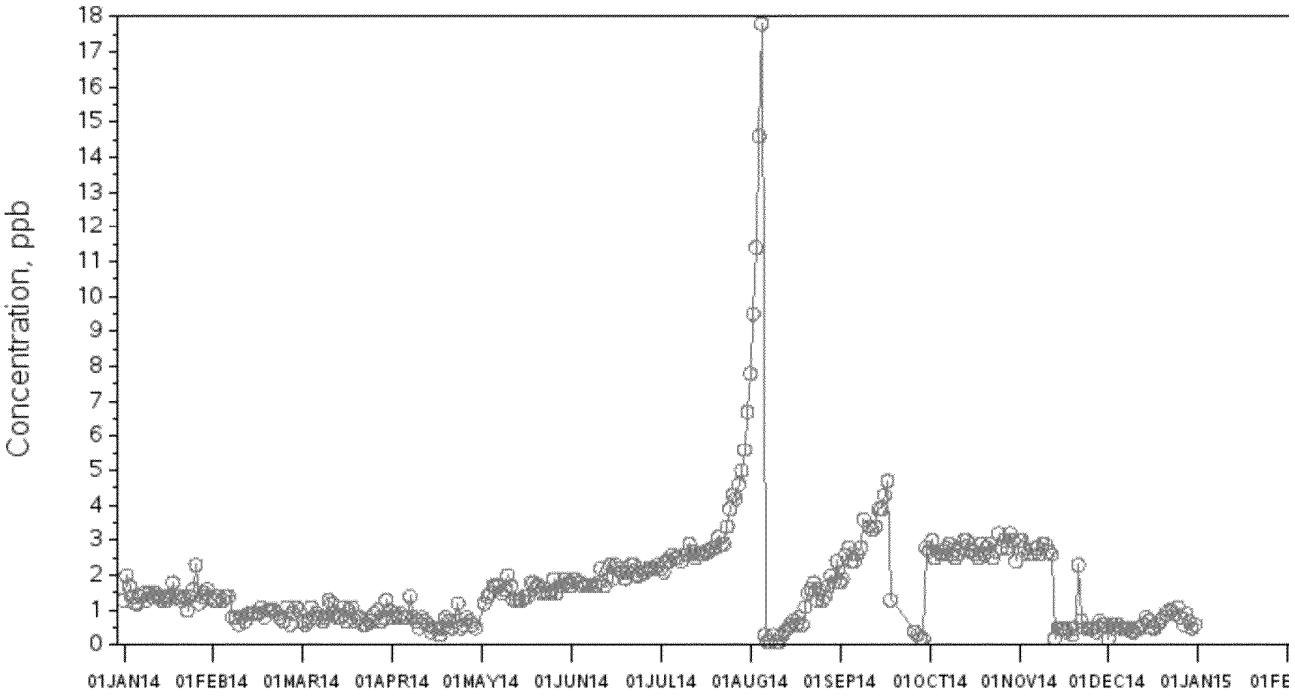
Ed

Ed Liebsch, V.P., Sr. Air Quality Scientist

D: 763-591-5452 M: 612-616-3719

Daily Max 1-hour SO2 Concentrations from 01/01/14 to 12/31/14

Parameter: Sulfur dioxide (Applicable standard is 75 ppb)
CBSA:
County: Trego
State: Kansas
AQS Site ID: 20-195-0001, poc 1



Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: May 31, 2016

The following data link is active for the next 10 minutes, after which you must resubmit your query.
Download CSV (spreadsheet)

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Friday, May 27, 2016 11:00 AM
To: Liebsch, Ed
Cc: Marty Stange; Jason Redding; Ellis, Todd
Subject: RE: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Ed:

I've reviewed and made a few minor comments on the protocol you sent me, attached. The goal is to have a solid protocol that EPA Region 7 will approve without comments or changes. Below is a summary of those comments and our phone call discussion yesterday. As briefly discussed on the phone, SIP modeling is different from Construction Permit compliance modeling, and I'm still working my way up the learning curve.

The result of appropriate and sufficient modeling can establish air quality data for comparison to the 1-hour SO2 NAAQS for the purposes of **area designations**; attainment, nonattainment, or unclassifiable. While Whelan is your client, the nearby facilities benefit by being modeled at the same time, and it benefits all facilities in the Hastings area to cooperate to demonstrate an **area attainment designation** for the 1-hour SO2 NAAQS. A nonattainment **area designation** will have an effect on all facilities in that area.

CEMs data for AGP

Todd Ellis tells me AGP has CEMs data, but they are not required to give NDEQ hour by hour data, only quarterly data summaries, so we don't have those values we can give to you. We can request their records, but it would probably be a better idea to talk directly to Kelly Jorgensen and request the records yourself. Additionally, Todd can give you more information about AGP's CEMs data, so I would start by calling Todd. I told him you would be calling him next week and he is expecting to hear from you.

Todd Ellis

Environmental Section Supervisor

(402) 471-4561

todd.ellis@nebraska.gov

I can't remember, but do you need actual SO2 emissions from Chief as well? Chief

doesn't have a CEM, and so actual emissions are estimated using coal throughput values.

Receptor Grid

A finer receptor grid around Platte Generating Station is reasonable and justifiable.

Met files

Grand Island-Omaha upper air, met years 2013-15, sent yesterday. Can't use **Hastings, NE** met data because of missing 2013 1-minute ASOS wind data

1-Hour SO2 Background

The 3 years used to provide a background concentration should be consistent with the 3 years of emissions data and met data as well. You told me you have concerns about an apparent "drift" in the 2014 concentration value at Trego, KS 1-hour SO2 monitor. The value for 2014 does appear to be an outlier, although the State of KS Dept. of Health and Environment has told me that they stand by this value.

1-hour SO2 99th percentile	
Year	**ppb**
2011	3
2012	4
2013	3
2014	10
2015	4

Trego, KS 1-hour 99th percentile background

µg/m^3	**ppb**	**period**
14.9	5.7	2013-15
8.6	3.3	2011-13

Using 2013-15, the 1-hour SO2 background concentration is more that 50% higher than the 2011-13 value you have proposed in the protocol.

There are two SO2 monitors located in Iowa that conform to the 2013-15 time period, and reflect realistic regional SO2 background concentrations. One in Des Moines, the other in Van Buren County, locations are in the IA SO2.kmz file, attached.

The 2013 through 2015 Iowa 1-hour 99% 3-year average SO2 background are listed below.

Monitor Values Report

https://www3.epa.gov/airdata/ad_rep_mon.html,

ppb	ug/m3	Location
1.3	3.4	Des Moines, IA
3.0	7.8	Van Buren Co., IA

Hopefully, when I return from vacation on June 6th, we will be able to quickly solidify the protocol and send it to EPA Region 7.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Liebsch, Ed [mailto:Ed.Liebsch@hdrinc.com]
Sent: Monday, May 23, 2016 5:22 PM
To: Alam, Lisa
Cc: Marty Stange; Jason Redding
Subject: Whelan Energy Center - Proposed SO2 dispersion modeling protocol

Lisa,

Please find attached for NDEQ review and approval the proposed SO2 modeling protocol for the Whelan Energy Center. Sorry for the delay in getting this to you. Hopefully it is an easy review as we've tried to be consistent, where it makes sense, with the prior approved protocols.

Please let me know at your earliest convenience if you see any need for changes, and if so, we can quickly get appropriate revisions made and re-submitted.

Ed

Ed Liebsch, V.P.

Senior Air Quality Scientist

HDR

701 Xenia Avenue South, Suite 600
Minneapolis, MN
D 763.591.5452 M 612.616.3719
ed.liebsch@hdrinc.com

hdrinc.com/follow-us

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Mon 6/20/2016 7:00:48 PM
Subject: RE: 1-Houe SO2 Background - used in Iowa

Hi Lisa,

It looks like Iowa has recently went to using the design value at one monitor (Van Buren) as its statewide default background (7 pbb) for 1-hr SO2:

http://www.iowadnr.gov/Environmental-Protection/Air-Quality/Modeling/Dispersion-Modeling/Background-Data

Previously, their background TSD used an average of 4 SO2 monitors throughout the state to get its statewide background. This average of the 4 monitors value was what Iowa used in its 1-hr SO2 CD round modeling last year, and here is a description of their previous methodology:

*IDNR chose the "first tier" approach but derived a statewide default background concentration using an average of the concentrations of four monitors using 2009-2011 data. The derived average background concentration was based on monitors from the following four cities in Iowa: Cedar Rapids, Davenport, Des Moines, and Keosauqua. While the averaging of multiple monitors is not outlined in the Modeling TAD, EPA Region 7 believes that this methodology provides a conservative background concentration for the facility area, which is located in rural Iowa. In contrast, the four monitors used in the average background concentration are located near higher populated areas and other sources of SO_2 emissions. In fact, IDNR no longer uses this averaging technique for sources in rural areas for this reason. IDNR is now using the Lake Sugema monitor for sources in rural areas since this monitor is located in a rural area. The Lake Sugema monitor has a design value of 7 $\mu g/m^3$, which is much lower than the background design value proposed in this analysis**[1]**.*

But for the their 1-hr SO2 DRR modeling this year, Iowa is going to use the new updated TSD and just the Van Buren county site for background.

So Iowa is updating their approach to use just 1 site. Averaging the backgrounds of Polk and Van Buren is an option, but I believe the best option and would be to use one of the somewhat conservative backgrounds from Van Buren, IA monitor (like Iowa is now) or Union County, SD monitor.

Please let me know of questions that you have.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, June 20, 2016 9:36 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: 1-Houe SO2 Background - used in Iowa

Lance:

You mentioned to me on the phone that Iowa used an average of the two monitors in Polk and Van Buren to set a background concentration.

Am I recalling this accurately?

Did they have a justification or write-up in their protocols?

I'm asking on behalf of Ed Liebsch, HDR. I mentioned IDNR's 1-hour SO2 background determination, and Ed has requested me to track

down any documentation. I did a quick search using Google and kept running across their 2010 SO2 study. I could also call Iowa directly,

but I thought I'd start with you first.

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

Nebraska Department of Environmental Quality (NDEQ)

The Atrium Building, Suite 400, 1200 "N" Street, Lincoln, NE 68508-8922

Phone: 402-471-2925 FAX: 402-471-2909

Website: http://deq.ne.gov Click on "Focus on Air"

---

[1] http://www.iowadnr.gov/Portals/idnr/uploads/air/dispmodel/background_concentrations_tsd.pdf

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Mon 6/6/2016 5:42:58 PM
Subject: RE: Whelan Energy Center - 1-hour SO2 protocol - background concentrations - Whelan-mod.kmz

Thanks Lisa,

I added the rural Union County, SD (Sioux City, SD) design value to the kmz file. I believe it is the closest monitor to Hastings with data for 2013-15 period and is a rural site. We can add that to the options, and has a design values of 5ppb.

I will give you a call back here in the next hour.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Monday, June 06, 2016 10:27 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: Whelan Energy Center - 1-hour SO2 protocol - background concentrations -

Lance:

If we can all get on the same page for the 1-hour SO2 background, then I should be

ready to send you the protocol.

From the Consultant's Draft Protocol

BACKGROUND CONCENTRATION

The background 1-hour SO2 concentration will be based on data from the rural monitor located at Cedar Bluff Reservoir (EPA Site ID number 201950001) in Trego County in western Kansas. This monitor is far from any nearby large SO2 sources, so is representative of background concentrations in rural areas of Nebraska exclusive of nearby major source impacts. Consistent with other recently approved SO2 modeling analyses for power plants in Nebraska, the background concentration will be based on the 2011-2013 data from this site. The table below shows the calculated average of the 99th percentile daily maximum 1-hour value as 8.7 µg/m3 across the three years of Trego County data. Therefore, a background 1-hour SO2 concentration of 9 µg/m3 will be used for this analysis.

Year	Daily Maximum 1-hour, 99th Percentile	
	(ppb)	($\mu g/m^3$)
2011	3	7.9
2012	4	10.5
2013	3	7.9
Average	**3.3**	**8.7**

2013-15 Iowa SO2 Daily Maximum 1-hour, 99th Percentile

ppb	ug/m3	
1.3	3.4	Des Moines, IA
3.0	7.8	Van Buren County, IA

Google Earth kmz file attached

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

Nebraska Department of Environmental Quality (NDEQ)

The Atrium Building, Suite 400, 1200 "N" Street, Lincoln, NE 68508-8922

Phone: 402-471-2925 FAX: 402-471-2909

Website: http://www.deq.state.ne.us/ Click on "Focus on Air"

Untitled map

Whelan

Whelan Stack

558327.13 4492394.71

#icon-ci-1

-98.310825,40.580279,0.0

KS and IA SO2 monitors

3.3 ppb Cedar Bluff, KS Trego County, KS #201950001

Name CEDAR BLUFF
Trego County

#icon-ci-2

-99.763424,38.770081,0.0

1.33ppb Des Moines, IA #191530030

Des Moines-West Des Moines, IA
1907 Carpenter, Des Moines Iowa
191530030
8317,8259,8301 1-hour observations

2013-15
 (1+1+ 2)/ 3 = 1.33 ppb

#icon-ci-2

-93.643318,41.602936,0.0

3ppb Van Buren Co., IA #19177006

24430 Lacey Trail
Van Buren County, Iowa
not in a city
8286,7671,8068 1-hour observations

3+3+3 = 9/3 = 3 ppb 3 year average

#icon-ci-2

-91.993319,40.694752,0.0

5ppb 31986 475th Ave, Union County, SD #461270001

(6+4+5)/3 =5ppb

#icon-ci-2

-96.70745190000002,42.7541518,0.0

nearbys

Platte Generating

#icon-ci-1-nodesc

-98.348242,40.853745,0.0

AGP

#icon-ci-1-nodesc

-98.33948,40.593266,0.0

Chief

#icon-ci-1-nodesc

-98.319088,40.584563,0.0

Untitled layer

1.1

images/icon-1.png

0.0

1.1

images/icon-1.png

1.1

normal

#icon-ci-1-normal

highlight

#icon-ci-1-highlight

1.1

images/icon-1.png

0.0

<h3>$[name]</h3>

1.1

images/icon-1.png

1.1

<h3>$[name]</h3>

normal

#icon-ci-1-nodesc-normal

highlight

#icon-ci-1-nodesc-highlight

1.1

images/icon-2.png

0.0

1.1

images/icon-2.png

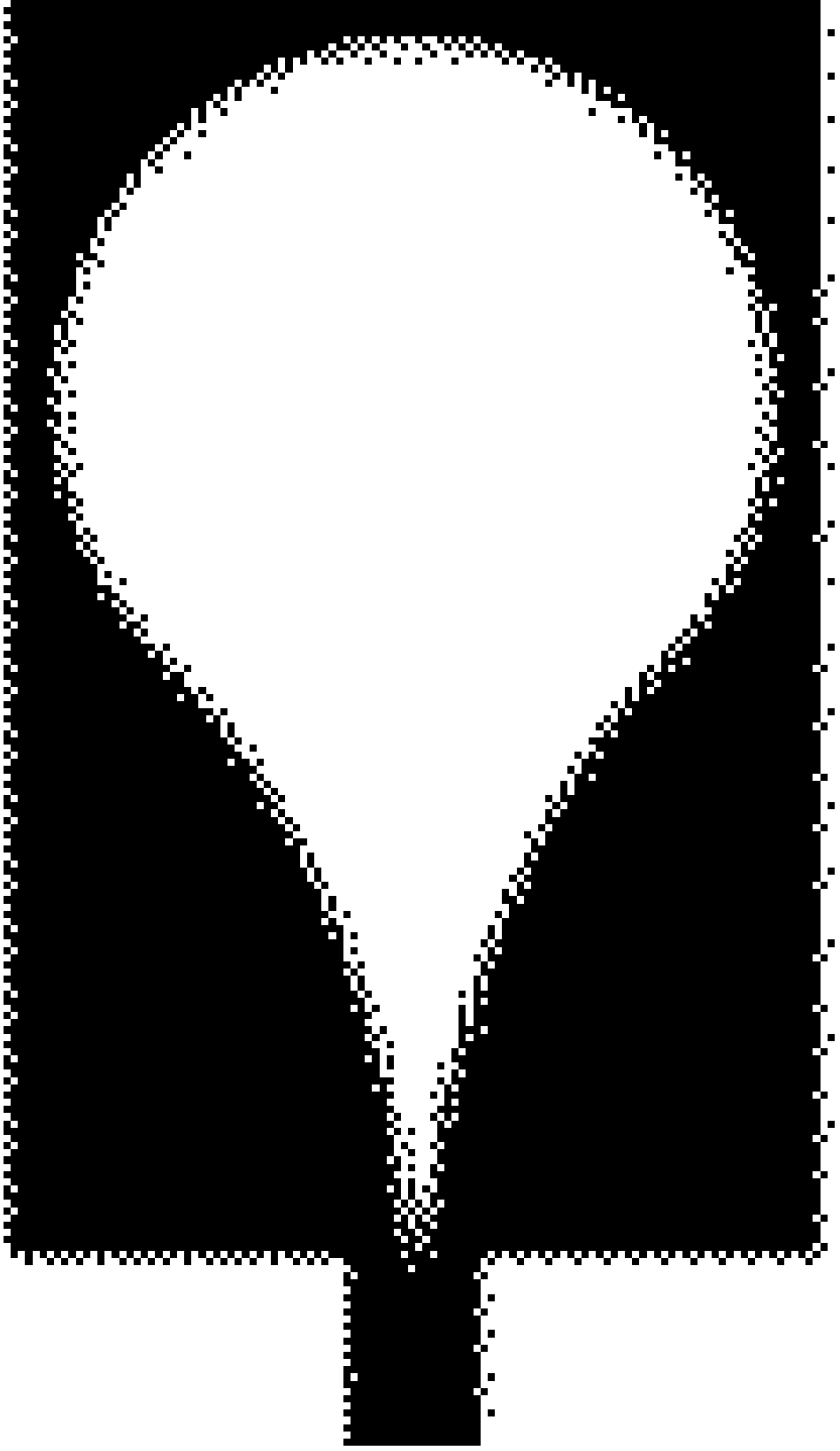
1.1

normal

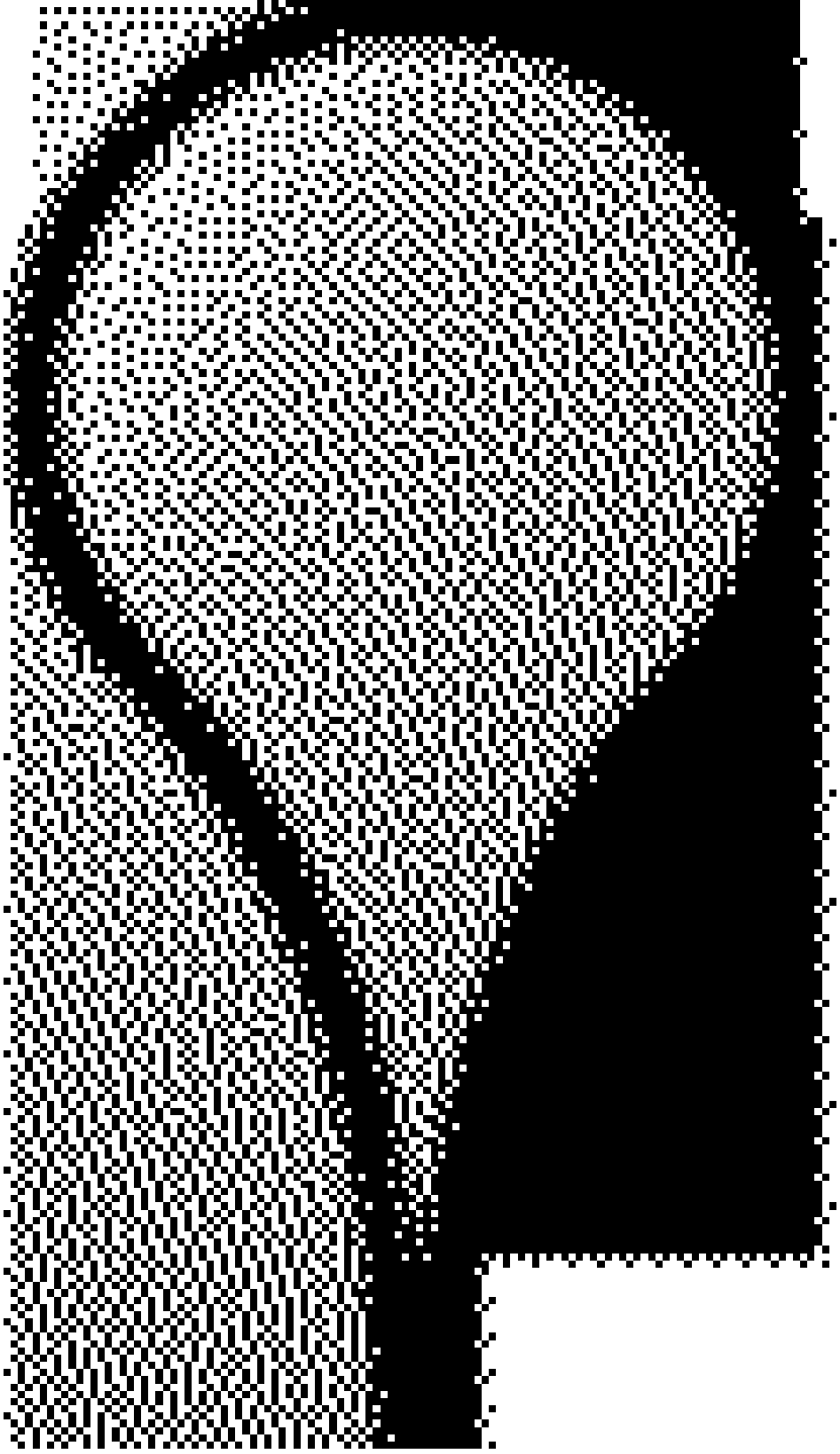
#icon-ci-2-normal

highlight

#icon-ci-2-highlight



0011721



0011722

To: jlcitta@nppd.com[jlcitta@nppd.com]; carrie.wiese@nebraska.gov[carrie.wiese@nebraska.gov]; dennis.wright@stinsonleonard.com[dennis.wright@stinsonleonard.com]; javanek@nppd.com[javanek@nppd.com]; hlhadla@nppd.com[hlhadla@nppd.com]; mjspenc@nppd.com[mjspenc@nppd.com]
Cc: Andy Hawkins (hawkins.andy@epa.gov)[hawkins.andy@epa.gov]; Algoe-Eakin, Amy[Algoe-Eakin.Amy@epa.gov]; Peter, David[peter.david@epa.gov]
From: Avey, Lance
Sent: Wed 4/6/2016 4:24:52 PM
Subject: Guidance to establish 1-hr SO2 modeled emissions and permit limit

All,

Below is a link to the Modeling TAD for implementing the 2010 1-hr SO2 NAAQS:

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/SO2ModelingTAD.pdf

Within the TAD, Section 5.4 has a brief discussion on use of allowable emissions in designation modeling. Further detailed information on the methodology to develop a modeled emissions rate and permitted emission limit is provided in EPA's Guidance for 1-Hour SO2 Nonattainment Areas SIP Submissions:

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/20140423guidance.pdf

The guidance describes and gives an example on how to develop a "critical" 1-hr modeled emissions rate to establish a new permit limit (i.e., 30 day rolling average) that account for variations in operations and sulfur content (i.e., variability analysis).

Please let us know if you have questions or want further discussions on the these guidance documents.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]
Cc: Hamilton, Heather[Hamilton.Heather@epa.gov]; McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]
From: Avey, Lance
Sent: Fri 3/18/2016 3:42:49 PM
Subject: RE: SO2 DRR Protocol - IPL-Prairie Creek

Hi Brad,

Thanks again for providing the protocols. In terms of receptors on buildings, the top of buildings are often a great location to place a monitor, so it would be a feasible place for a monitor. And since buildings often contain employees that can potentially be exposed to ADM or IPL emissions, EPA would not support removing receptors from building locations within the modeling grid.

Please let me know of any more questions.

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Monday, March 14, 2016 10:22 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Hawkins, Andy <hawkins.andy@epa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>
Subject: SO2 DRR Protocol - IPL-Prairie Creek

Lance,

I have attached the revised protocol from IPL. This is the last protocol we were waiting on for the DRR sources.

Please review this along with the other three protocols and send any comments you may have to me.

The potential need for a larger receptor grid is not addressed in this protocol because I hadn't yet received that comment from you when I gave IPL my comments on their initial submittal. So I anticipate that comment here as well. I also have not discussed the need to evaluate IPL's impact on ADM's property (and vice versa) with them. I am waiting to hear what OAQPS has to say regarding the removal of receptors from the non-ambient air within buildings so I can cover everything at once. If you can provide that information with your response to these protocols that would be very helpful.

Thank you,

- Brad

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]
Cc: Hawkins, Andy[hawkins.andy@epa.gov]; Hamilton, Heather[Hamilton.Heather@epa.gov]; Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]; McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]
From: Avey, Lance
Sent: Thur 3/10/2016 9:23:35 PM
Subject: RE: SO2 Designation Grid

Hi Brad,

OAQPS wanted beefed up justification for the use of 5 km modeling grid, as Consent Decree 1-hr SO2 source modeling saw all sorts of different size modeling domains and 5 km being the smallest. Overall, IDNR's discussion of nearby sources in the TSD for 1-hr CD SO2 modeling was well done, and the lack of major SO2 sources within 20 km of the 3 CD facilities modeled gives some good justification for using a 5km grid. Further, a discussion of the nearby terrain and if there is (or not) any elevated terrain beyond the 5km grid would provide additional justification.

What caused some issues with the 5km grid, was that George Neal, with the tall stacks and emissions from the North Unit, saw high SO2 concentrations at the edge the 5km grid to the northwest of GNN. And if there may be some higher terrain beyond 5km above the Missouri River valley, that elevated area may be where we would see the maximum modeled concentrations if the grid was expanded to say 10km. This was not an issue for Ottumwa and Burlington. So an evaluation and discussion of the model results at the grid edges can be used as further weight-of-evidence that the maximum concentration is within the chosen grid. However, this can be tough because the results are not known until after the modeling is performed.

For isolated sources without any or very few nearby SO2 sources, OAQPS did not raise any issues with the use of a 10km grid in those situations. However, that is not to say a 10km grid is preferred. I would believe any grid size between 5 and 50 km would be ok if the justification is there based on a technical discussion of nearby sources, terrain, and any modeling results at the grid edges.

I hope this helps, let me know of further questions.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Thursday, March 10, 2016 1:05 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Cc: Hawkins, Andy <hawkins.andy@epa.gov>; Hamilton, Heather <Hamilton.Heather@epa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>; McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>
Subject: SO2 Designation Grid

Lance,

Thank you for the information you provided today regarding EPA's position on the extent of the receptor grid in the SO2 designations modeling. Can you tell me what domain size OAQPS would consider appropriate to address their concern for national consistency?

- Brad

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Wed 3/2/2016 2:35:13 PM
Subject: RE: met data question for Whelan Energy - area designation 1-hr SO2

Hi Lisa,

Yes, that would be ok to use the Grand Island ASOS. Just have a brief discussion in the modeling protocol/report about the missing data at Hastings. Also, may be mention in the discussion the similar characteristics between GI and Hastings, like the similar rural land-use and that they are each located at the local airports. You could just show a quick wind-rose comparison between the 2010-12 Hastings ASOS and the 2013-15 GI ASOS to point to how similar they are.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Wednesday, March 02, 2016 7:57 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: met data question for Whelan Energy - area designation 1-hr SO2

Lance:

As you may be aware, 9 out of 16 ASOS stations in NE that are missing June through December 1-minute data (see below).

I'm currently working on a protocol for Whelan Energy, Hastings NE, and I would like to use Grand Island met data

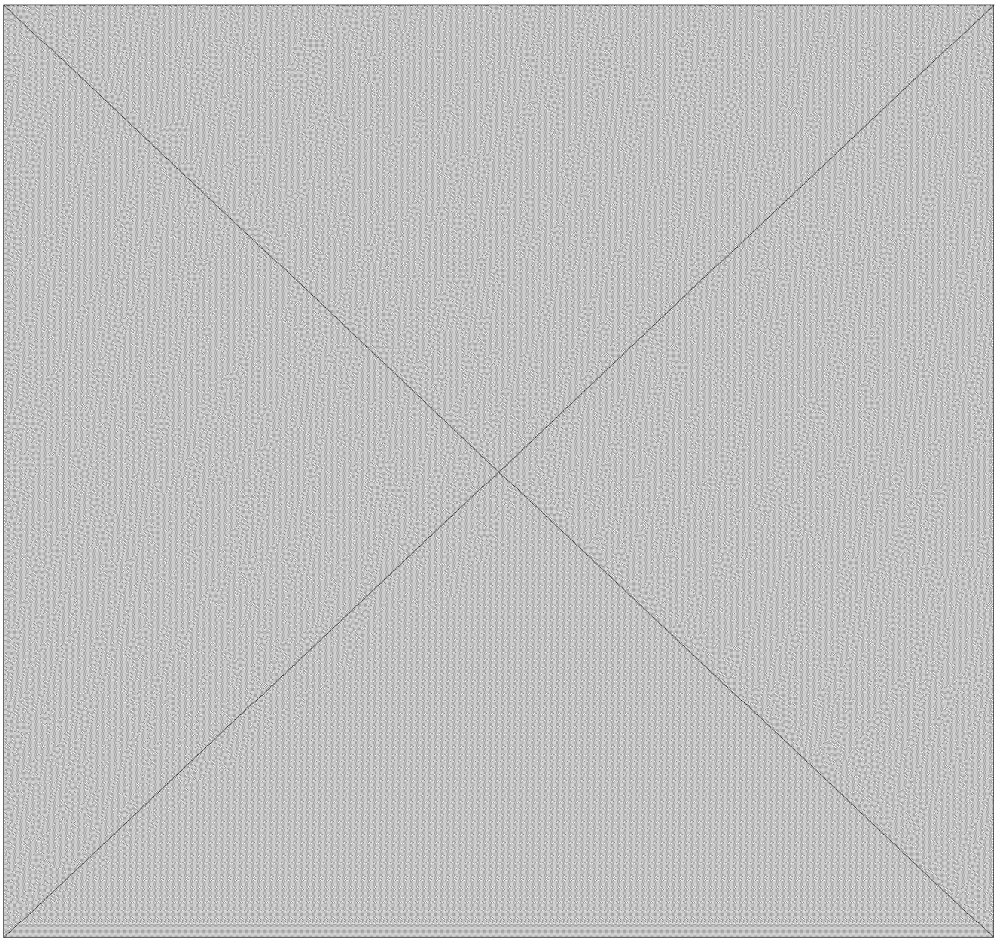
because of the missing 1-minute data.

Grand Island is 42.2 km away, and has data for 2013-15.

Hastings is closer, only 10.4 km away, but I have to use 2010-12, because 2013 1-minute wind data is missing.

Would this be acceptable to EPA Region 7? I had this conversation once already with Andy, but at that time the discussion

was about PSD and minor source modeling, and not the area designation modeling for 1-hour SO2.



****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Tue 3/1/2016 8:19:54 PM
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info

Hi Lisa,

I see, the only possible questionable source that is not on the current list that had one of the years between 2013-2015 with > 2,000 tpy would be the Lon D. Wright Plant in Fremont. But, I am not sure if my office is going to look to add Lon D. Wright to Nebraska's provided list at this time, more of the policy folks call here, and I am really not sure what their plan is.

On your other question, looking at:

ftp://ftp.ncdc.noaa.gov/pub/data/noaa/ish-format-document.pdf

I found:

GEOPHYSICAL-POINT-OBSERVATION time

The time of a GEOPHYSICAL-POINT-OBSERVATION based on

Coordinated Universal Time Code (UTC).

MIN: 0000 MAX: 2359

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, March 01, 2016 1:24 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info

Lance:

I've seen that document, but I felt I needed to make certain since there's been some confusion.

Quick question:

GMT to LST? I just ran across a warning from AERMET that my conversion may not be correct.

From the AERMET User Guide:

LOCATION keyword also defines the number of hours required to convert the time of each data record to local standard time (LST). For stations west of Greenwich, this value is specified as a positive number. ***Since most formats reporting hourly surface observations use local standard time, the conversion is usually 0***, which is the default value. Therefore, if this

adjustment

is zero, this parameter can be omitted. If data are reported in GMT, then the number

of time zones west (positive number) or east (negative number) of Greenwich is specified.

Is NWS ASOS met data on the ftp Web site in LST or GMT?

ftp://ftp.ncdc.noaa.gov/pub/data/noaa/

I've gone through every document and I can't find any verification.

However, in the *.ish files I find

01557255259494920100101005 37+40604-098427FM-15+0596KHSI
V0209999C000052200059N0112655N5-01335

<snip>

MAX TEMP (F):19 24 HR MAX TEMP TIME (LST)

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, March 01, 2016 11:32 AM
To: Alam, Lisa
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info

Hi Lisa,

I attached the sources for Nebraska we received from Carrie Weiss. She may know better than me about the determination. So I would chat with her. But, I believe it is if any year from 2013-2015 had annual emissions > 2,000 tpy according to Air Markets. But that could be wrong, and may be the annual averaged emissions from 2013-2015 > 2,000 tpy.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, March 01, 2016 8:22 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info

Lance:

Is there guidance to determine which facilities are above this 2000 tpy rate?

I have in my notes that I should use 2011 data, and I also have in my notes I should use 2012 data, from Air Markets Program Data. Which is it?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, February 29, 2016 4:04 PM
To: Alam, Lisa
Cc: Hawkins, Andy
Subject: 1-hr SO2 Data Requirements Rule (Round 3) Info

Hi Lisa,

Passing along information on Round 3 of the 1-hr SO2 designation process. Here is a Fact Sheet from EPA's SO2 implementation page with a timeline:

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/so2_drr_fs_081215.pdf

Please check it out, and let me know of questions. Of note:

For source areas that an air agency decides to evaluate through air quality modeling, the air agency must provide a modeling protocol to the EPA Regional Administrator by July 1, 2016. The modeling analysis must be submitted to the EPA by January 13, 2017.

Hope this helps,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Alam, Lisa[lisa.alam@nebraska.gov]
From: Avey, Lance
Sent: Tue 3/1/2016 5:32:11 PM
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info
Nebraska DRR List.pdf

Hi Lisa,

I attached the sources for Nebraska we received from Carrie Weiss. She may know better than me about the determination. So I would chat with her. But, I believe it is if any year from 2013-2015 had annual emissions > 2,000 tpy according to Air Markets. But that could be wrong, and may be the annual averaged emissions from 2013-2015 > 2,000 tpy.

Thanks

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Alam, Lisa [mailto:lisa.alam@nebraska.gov]
Sent: Tuesday, March 01, 2016 8:22 AM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: 1-hr SO2 Data Requirements Rule (Round 3) Info

Lance:

Is there guidance to determine which facilities are above this 2000 tpy rate?

I have in my notes that I should use 2011 data, and I also have in my notes I should use 2012 data, from Air Markets Program Data. Which is it?

****

Lisa M. Alam / Environmental Engineer / Air Dispersion Modeling

Air Program Planning and Development Team, Air Quality Division

(402) 471-2925

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Monday, February 29, 2016 4:04 PM
To: Alam, Lisa
Cc: Hawkins, Andy
Subject: 1-hr SO2 Data Requirements Rule (Round 3) Info

Hi Lisa,

Passing along information on Round 3 of the 1-hr SO2 designation process. Here is a Fact Sheet from EPA's SO2 implementation page with a timeline:

https://www3.epa.gov/airquality/sulfurdioxide/pdfs/so2_drr_fs_081215.pdf

Please check it out, and let me know of questions. Of note:

For source areas that an air agency decides to evaluate through air quality modeling, the air agency must provide a modeling protocol to the EPA Regional Administrator by July 1, 2016. The modeling analysis must be submitted to the EPA by January 13, 2017.

Hope this helps,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Lynn Deahl[LDeahl@kdheks.gov]
From: Avey, Lance
Sent: Tue 2/9/2016 9:22:17 PM
Subject: RE: SO2 Background Concentrations

Thanks Lynn!

Much appreciated, we know the approach MDNR used for its KCMO modeling, so thanks for pointing out that is where the Nearman # came from.

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Lynn Deahl [mailto:LDeahl@kdheks.gov]
Sent: Tuesday, February 09, 2016 3:09 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: SO2 Background Concentrations

Lance,

I gave KCP&L (Trinity) the value of 7 ppb (18.01 $\mu g/m^3$), and gave BPU (Trinity again) the value of 13 ppb (33.57 $\mu g/m^3$), for use as (respective) background concentrations for their modeling. As for "additional analysis, I found Trinity's use of "standard" options acceptable.

The were (from the BPU modeling protocol):

Standard AERMET processing options will be used.[4,5] The options elected will include:

MODIFY keyword for upper air data

THRESH_1MIN 0.5 keyword to provide a lower bound of 0.5 m/s for 1 - minute wind data

AUDIT keywords to provide additional QA/QC and diagnostic information

ASOS1MIN keyword to incorporate 1 - minute wind data

NWS_HGT WIND 10 keyword to designate the anemometer height as 7.9 meters

METHOD WIND_DIR RANDOM keyword to correct for any wind direction rounding in the raw ISHD data

METHOD REFLEVEL SUBNWS keyword to allow use of airport surface station data

Default substitution options for cloud cover and temperature data were not overridden

Default ASOS_ADJ option for correction of truncated wind speeds was not overridden

ADJ_U* beta option was not used

Please note I got the background values as follow:

- For La Cygne, I used the latest design value for the Mine Creek monitor before it was shut down, i.e., for the period 2011-2013.

- For Kansas City, I used the value the KCMO modelers used for their KC attainment demonstration, given to me by Ashley Keas. I just tried to reach her to verify, but she wasn't in… but seems like that's something easily done at your end, too.

Hope that helps!

-Lynn

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, February 09, 2016 1:49 PM
To: Lynn Deahl <LDeahl@kdheks.gov>
Subject: SO2 Background Concentrations

Hi Lynn,

I have had a couple of comments on the background concentrations used at La Cygne and Nearman CD source SO2 modeling. La Cygne used a 18.01 ug/m3 and Nearman used a background of 33.57 ug/m3. Do you know what SO2 monitors these numbers are derived from? And if any additional analysis (e.g., sector analysis) was done?

Thanks,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: LDeahl@kdheks.gov[LDeahl@kdheks.gov]
From: Avey, Lance
Sent: Tue 2/9/2016 7:48:51 PM
Subject: SO2 Background Concentrations

Hi Lynn,

I have had a couple of comments on the background concentrations used at La Cygne and Nearman CD source SO2 modeling. La Cygne used a 18.01 ug/m3 and Nearman used a background of 33.57 ug/m3. Do you know what SO2 monitors these numbers are derived from? And if any additional analysis (e.g., sector analysis) was done?

Thanks,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]
From: Avey, Lance
Sent: Wed 12/30/2015 8:23:21 PM
Subject: RE: SO2 Data Requirements Rule Modeling Protocols

Thanks Brad,

I am going to bring up the topic of a DRR source being modeled next to a NAA and if receptors need to be placed in NAA on a routine technical call with OAQPS. Not sure if they will have anything to say, but hopefully get their opinion sometime here in early January. And I will let you know what they say. Personally, I would be fine with not including receptors with the Muscatine SIP addressing Louisa impact on the NAA.

Have a happy New Year,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

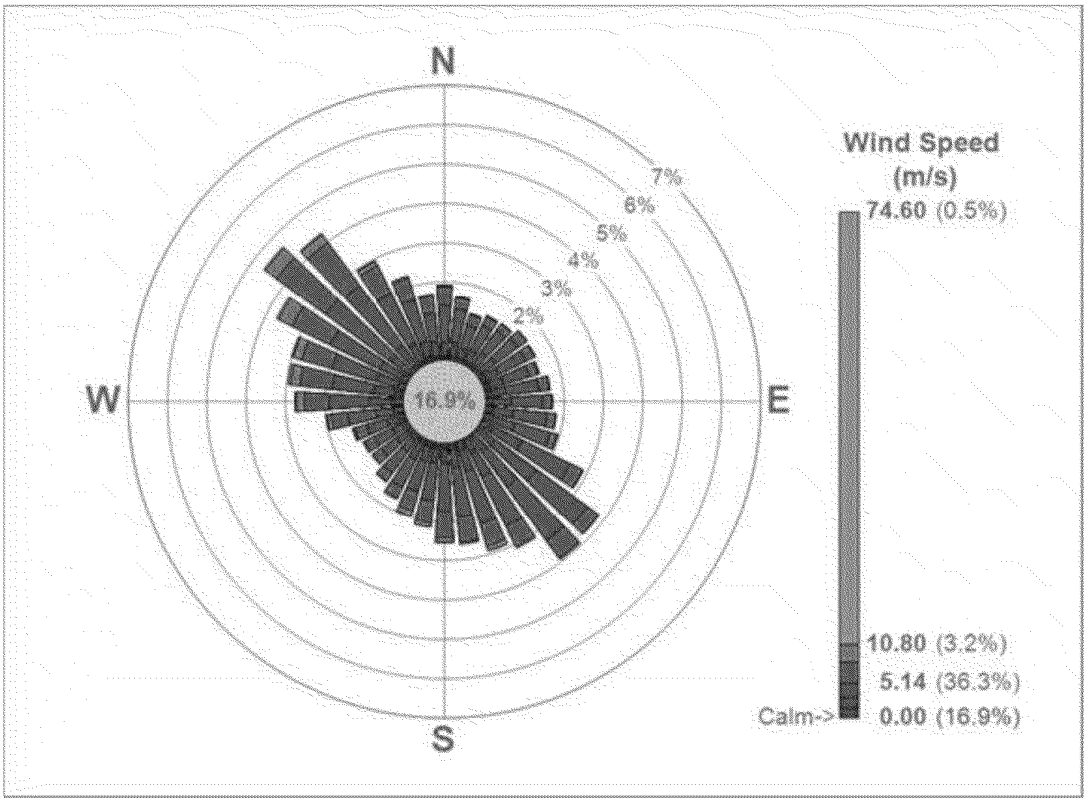
From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Wednesday, December 23, 2015 3:04 PM
To: Avey, Lance <Avey.Lance@epa.gov>
Subject: RE: SO2 Data Requirements Rule Modeling Protocols

Lance,

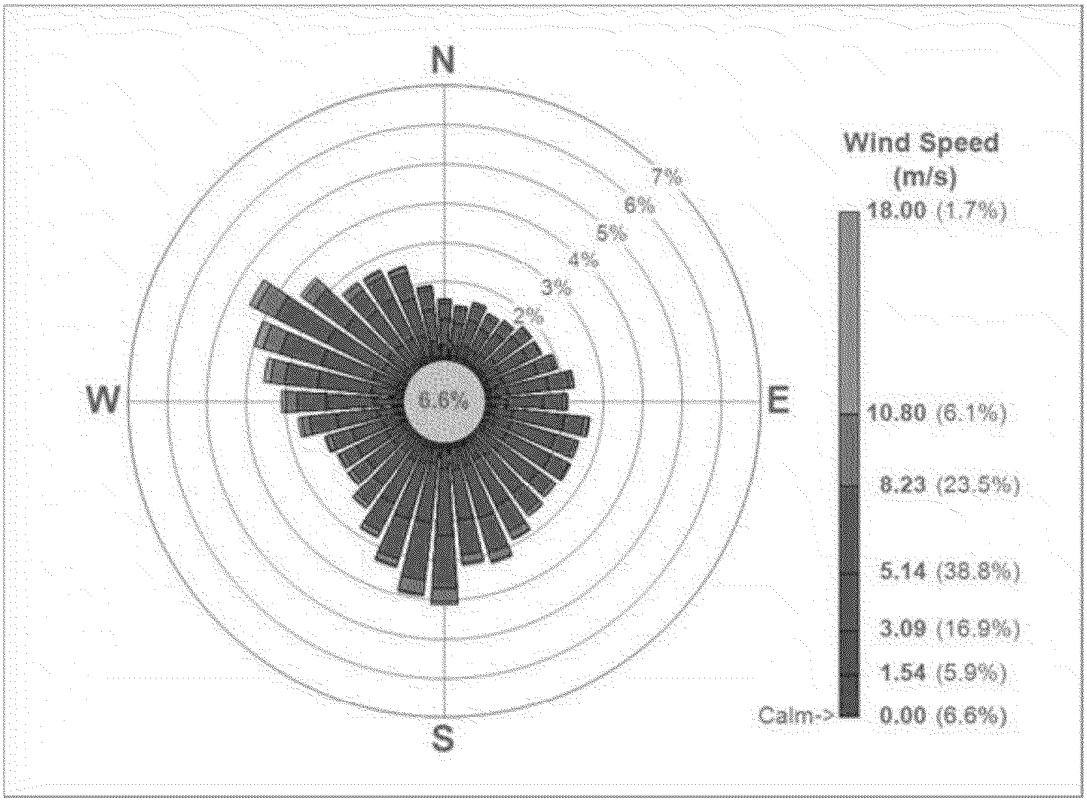
Thank you for your review and comments.

Regarding the lack of receptors in the NAA, the assumption is that the inclusion of Louisa in the Muscatine Non-Attainment modeling would take care of any potential impacts they may have in the NAA. You are correct though that the NA modeling uses a different meteorological dataset. The main difference between the two is that the Southern component of the Davenport wind rose is mostly from the South while the Southern component of the Iowa City data is Southeasterly:

Iowa City:



Davenport:



Given this comparison do you feel that the inclusion of receptors in the NAA is needed?

- Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling
Iowa Department of Natural Resources

P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

From: Avey, Lance [mailto:Avey.Lance@epa.gov]
Sent: Tuesday, December 22, 2015 9:46 AM
To: Ashton, Brad [DNR] <Brad.Ashton@dnr.iowa.gov>; Hawkins, Andy <hawkins.andy@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>
Subject: RE: SO2 Data Requirements Rule Modeling Protocols

Hi Brad,

Thank you for providing the modeling protocols. I am guessing that Louisa's impact on the Muscatine NAA is being evaluated in the Muscatine SIP? Just noticing that no receptors are being placed inside the NAA for Louisa evaluation. I know the SIP addresses that all of the NAA will show attainment, and thus the Louisa evaluation should be moot for that area. But with the southeast winds one would think the max impact from Louisa may be in the NAA to the north, and it would not hurt to place receptors there to see if the NAA is the area of max impact for Louisa, even if below the NAAQS. Lastly, does the Muscatine SIP use surface met from Iowa City like the protocol proposes for Louisa? Any big differences in met between the Davenport and IC stations?

Thanks and happy holidays,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Tuesday, December 15, 2015 3:07 PM
To: Hawkins, Andy <hawkins.andy@epa.gov>; Avey, Lance <Avey.Lance@epa.gov>
Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>
Subject: SO2 Data Requirements Rule Modeling Protocols

Andy and Lance,

I have attached the modeling protocols for two of the facilities for which we will be performing modeling for the data requirements rule. I have also attached our responses to the protocols. Please take a look at these and let me know if you have any comments.

Thanks,

Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling
Iowa Department of Natural Resources

P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

To: Ashton, Brad [DNR][Brad.Ashton@dnr.iowa.gov]; Hawkins, Andy[hawkins.andy@epa.gov]
Cc: McGraw, Jim [DNR][jim.mcgraw@dnr.iowa.gov]; Krzak, Jennifer [DNR][Jennifer.Krzak@dnr.iowa.gov]; Johnson, Matthew [DNR][Matthew.Johnson@dnr.iowa.gov]
From: Avey, Lance
Sent: Tue 12/22/2015 3:46:26 PM
Subject: RE: SO2 Data Requirements Rule Modeling Protocols

Hi Brad,

Thank you for providing the modeling protocols. I am guessing that Louisa's impact on the Muscatine NAA is being evaluated in the Muscatine SIP? Just noticing that no receptors are being placed inside the NAA for Louisa evaluation. I know the SIP addresses that all of the NAA will show attainment, and thus the Louisa evaluation should be moot for that area. But with the southeast winds one would think the max impact from Louisa may be in the NAA to the north, and it would not hurt to place receptors there to see if the NAA is the area of max impact for Louisa, even if below the NAAQS. Lastly, does the Muscatine SIP use surface met from Iowa City like the protocol proposes for Louisa? Any big differences in met between the Davenport and IC stations?

Thanks and happy holidays,

Lance

Lance Avey

EPA Region 7

11201 Renner Boulevard

Lenexa, Kansas 66219

(913) 551-7809

avey.lance@epa.gov

From: Ashton, Brad [DNR] [mailto:Brad.Ashton@dnr.iowa.gov]
Sent: Tuesday, December 15, 2015 3:07 PM
To: Hawkins, Andy <hawkins.andy@epa.gov>; Avey, Lance <Avey.Lance@epa.gov>

Cc: McGraw, Jim [DNR] <jim.mcgraw@dnr.iowa.gov>; Krzak, Jennifer [DNR] <Jennifer.Krzak@dnr.iowa.gov>; Johnson, Matthew [DNR] <Matthew.Johnson@dnr.iowa.gov>
Subject: SO2 Data Requirements Rule Modeling Protocols

Andy and Lance,

I have attached the modeling protocols for two of the facilities for which we will be performing modeling for the data requirements rule. I have also attached our responses to the protocols. Please take a look at these and let me know if you have any comments.

Thanks,

Brad

BRAD ASHTON, Lead Worker – Dispersion Modeling
Iowa Department of Natural Resources

P 515.725.9527 | F 515.725.9501 | Brad.Ashton@dnr.iowa.gov

Air Quality Bureau | 7900 Hickman Rd., Ste. 1 | Windsor Heights, IA 50324

www.IowaCleanAir.gov | Air Construction Permit Hotline 877.247.4692

WWW.IOWADNR.GOV

Leading Iowans in Caring for Our Natural Resources.

To: Peter, David[peter.david@epa.gov]; Hawkins, Andy[hawkins.andy@epa.gov]
Cc: Bredehoft, Deborah[bredehoft.deborah@epa.gov]; Weber, Rebecca[Weber.Rebecca@epa.gov]; Jay, Michael[Jay.Michael@epa.gov]
From: Douglas Watson
Sent: Thur 1/12/2017 5:28:41 PM
Subject: Kansas 1-hr SO2 DRR-Third Round designation submittal Document Package
Kansas 1-Hr SO2 DRR-Third Round Designation Submittal_compressed.pdf

All-

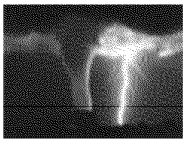
Please find attached the Kansas submission package for 1-hr SO2 DRR-Third Round Designation. A separate hard copy has been sent to the R7 Administrator. I will also attach the BPU updated modeling files to a separate e-mail. If you have any questions, please contact me. Thanks.

-Doug

** Please note my new e-mail address – Douglas.Watson@ks.gov

Douglas Watson
Chief, Air Monitoring & Planning Section

Meteorologist
Kansas Department of Health and Environment
Bureau of Air
1000 SW Jackson, Suite 310
Topeka, KS 66612-1366
E-Mail: Douglas.Watson@ks.gov
(785)296-0910
(785)296-7455 fax



From: Casburn, Tracey
Location: R7-RO2.3-L08-12/R7-RO; R7-Confline-[Ex. 6 - Personal Privacy]P10XXXX/Phone/R7-RO
Importance: Normal
Subject: Talk about path forward for SO2 DRR modeling submitted based on 2015 CEMS data
Start Date/Time: Tue 1/10/2017 8:30:00 PM
End Date/Time: Tue 1/10/2017 9:30:00 PM